Gleanings in Bee Culture

VOL. XL. JULY 1, 1912. NO. 13

COMB-HONEY OUTFIT NO. 7.

This outfit is especially adapted to the needs of those who winter indoors or live in a climate where the winters are mild. Each item has been very carefully selected, and we doubt the wisdom of leaving any article out; but the purchaser may do so without altering the prices on the other items.

One A B C and X Y Z of Bee Culture (536 pages)	**$1.50**
One copy Dovetailed Hive and its Uses (or any other 10c book)	**.10**
One year's subscription to "Gleanings in Bee Culture" (A large illustrated semi-monthly magazine)	**1.00**
One Junior Root Smoker	**.55**
One pair cotton bee-gloves (small, medium, or large)	**.50**
One Alexander Bee-veil	**.60**
One full colony Italian bees in 10-frame Dovetailed Hive (Complete with 32 section honey-boxes)	**12.00**
One untested Italian Queen	**1.50**
Two Dovetailed Hives complete for comb honey, using 4x4 sections (Nailed and painted, ready for the bees)	**6.90**
One Porter bee-escape and board (for taking honey from the bees)	**.35**
SPECIAL OFFER { Delivered, after June 1st, at any express office, north of Ohio River and east of Mississippi River	**for $25.00**

For delivery to points outside of above free limit, we will make terms on application.

In many cases a return of $10.00 in honey has been secured the first year from just such an outfit as this; and in addition one swarm and possibly two may be secured, which practically doubles the value of the investment. This is not an uncommon occurrence. On the contrary, scores of men have done as well or better, where the conditions were at all favorable. Read these reports.

Gentlemen:—I must say that the two three-frame nuclei that you sent me last year beat anything here by over one-third. It has given them a pretty good name around here. So much for your stock. No more black bees for me.

Burford, Ont., Canada, Oct. 4, 1909. W. M. KINSEY.

Gentlemen:—The bees and supplies arrived in perfect condition. So far they have given perfect satisfaction in every way. We opened the bees in the evening at about 4 o'clock, and the next morn ng bright and early they were hard at work in the orchard. I have worked aroundthe hives at different tim s to see if the bees would show any signs of resentment, but they seem to be perfectly contented in their new home. Yours very truly,

Madison, O., May 14, 1908. WM. S. HESS, JR.

Gentlemen:—The three-frame nuclei which I purchased from you on June 25th have paid in cash over 100 per cent on all outlay, and the pleasure derived from looking after them over 200 per cent. They still have about 60 to 65 pounds of honey in the hive. Yours very truly,

734 Hayden Ave., Collinwood Sta., Cleveland, O., Oct. 17, 1908. GEO. B. OGLE.

Gentlemen:—Our bee-outfit arrived in fine condition, and we transferred the bees in the yard, with the whole room of forty boys and girls standing around them. The day was cool and many bees dropped to the ground, apparently dead, but the children found if they held them in their hands and breathed on them that they would revive, so it ended by boys and girls having hands full of crawling bees The bees were gentle as could be and now the children are not afraid of them, and if one gets on the window in the room, a boy will pick it off and put it out.

To say we are pleased is stating it mildly. We are delighted. There are many things we want to know but have Mr. Root's A B C of Bee Culture from the library and can learn by study and observation.

Very truly,

9120 Wade Park Ave., Cleveland, O., Apr. 25, 1910. MISS LUELLA OBERHOLTZER.
(Teacher Lakewood General School, 8th Grade)

ST. PETER'S LUTHERAN CHURCH, NEW YORK, March 11, 1908.

Dear Sirs:—Enclosed please find my check for renewal of my subscription to GLEANINGS for five years. I greatly appreciate GLEANINGS, not only for the good and plain reading-matter, but also because it furnishes many kinks which otherwise one would be unable to find out. These kinks have enabled me in the last three years to sell from ten colonies on the average over $100.00 per year. I donate the money to my church for charitable purposes, and the members are eager to buy, because they know my honey is absolutely pure. Yours very truly, A. B. MOLDENKE, D. D.

The A. I. Root Company, Medina, Ohio

Enclosed find draft for $25.00, for which please send me Outfit No. 7, as listed above. I understand that you guarantee safe arrival and prepay all charges, if north of Ohio River and east of Mississippi River.

Name .....

Town .....

County ..... State .....

Gleanings in Bee Culture

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VOL. XL JULY 1, 1912 NO. 13

Editorial

Please send in postal-card reports, of one or two sentences, telling what the prospects for honey are this season in order that we may make up a general report for the entire country.

Our cover picture for this special issue represents an extracting apiary toward the close of the honey-flow, with the full supers stacked up four and five high. Talk about a refreshing sight for tired eyes! Is there any sight that is grander, to a beekeeper, than a nicely kept apiary of "sky-scraper hives"? This picture was made from one of Mr. Hutchinson's old negatives. We have now used ten of them in all, as cover pictures for the following numbers—December 15, January 15, February 1, February 15, March 1, March 15, April 15, May 15, June 1, and July 1.

PROSPECTS FOR THE HONEY CROP THIS SEASON.

If it had not been for the terrible losses of the bees over the country last winter and spring, indications are that this would have been one of the best honey years ever known. As it is, in many parts of the country, especially the clover districts of the North, bees are booming. Tons of nectar will go to waste this year because there are not enough bees to gather it. In the vicinity of Medina, at least, we are having one of the old-fashioned heavy yields from clover; and at this date, June 25, we are having to extract in our queen-rearing apiaries —something that we are almost never obliged to do. We have five outyards besides the home yard. All hands are busy giving room and extracting. With white and alsike clover in their prime, and basswood just beginning to bloom, and with a greater abundance of sweet clover than we have ever known, the prospect certainly looks very bright for honey at Medina. We have learned not to be too hopeful, however, for "there is many a slip 'twixt cup and lip."

FIVE-BANDED OR GOLDEN-TO-THE-TIP YELLOW BEES; DO SUCH BEES ACTUALLY EXIST?

There has been considerable correspondence between the breeders of extra-yellow bees and this office as to what constitutes five-banded stock. Some breeders, evidently, have been counting the dark segments as well as the yellow ones to make up the five bands. Others say there is no such thing as an all-five-banded colony, and that they have never advertised such bees. Others say that it is impossible to breed *bees* that will show yellow to the tip—that is, bees having abdomens entirely yellow without any black showing at all. We are inclined to believe that this statement is entirely true. It is an easy matter, comparatively, to produce *queens* which will have abdomens that are entirely yellow, and it is comparatively easy to produce *queens* that will produce *drones* that are yellow all over; but we have yet to see any queen that will produce yellow-all-over *bees* to the extent of ninety to ninety-five or even one hundred per cent of the entire bees of the colony. It is our opinion that, where a breeder advertises five-banded bees, he should furnish exactly that kind of stock—that is to say, queens that will produce five-banded to the extent of ninety per cent of the whole colony. Queens that will produce bees ten per cent five-banders, fifty per cent four-banders, and forty per cent three-banders, do not come up to the standard by a long way, if we are any judge. We do not think there is one of our queen-breeders who has a desire to misrepresent in his advertising in the least. A part of this confusion in advertising has come about through a misunderstanding as to what constitutes yellow-to-the-tip bees or five-banded bees. An advertiser can advertise truthfully yellow-all-over queens or queens that will produce yellow-all-over drones. The public should understand, however, that not the color of the drones nor the color of the queen constitutes the color of the bees themselves. A

queen may be yellow all over, and produce perfectly black bees. Conversely, a queen that is almost black may produce bees that are very yellow. We have seen this time and time again. The color of the queen is no criterion of what the color of the bees will be, although as a rule an extra-yellow queen, if she mates with an extra-yellow drone, will produce her kind. But an extra-yellow queen, if she mates with a dark drone, will produce all colors of bees ranging from dark to very light yellow; or she may produce miserable-looking hybrids because the bees take after their father. As is well known, all offspring, whether insects or animals, will resemble the father or look like the mother, and sometimes both.

Again, we find that there is some confusion as to what the term "golden" means. One breeder takes the view that it implies "yellow-to-the-tip." Others seem to give it a more flexible scope, meaning four and five-banded bees, or bees that are much more yellow than ordinary three-banded stock. When we refer to a "golden sunset" we may mean a beautiful ball of fire fringed with red and white with a predominance of golden yellow. In the same way we would say that "golden Italians" are nothing more than extra-yellow Italians—bright pretty bees with three, four, and five bands all in the same hive. In other words, a colony of goldens should show much more yellow than the ordinary stock.

THE NEW COLORADO COMB-HONEY GRADING RULES.

ALONG last December the Colorado Beekeepers' Association, one of the most influential organizations in the United States, adopted a new set of grading rules that in many respects are a decided advance over any thing that has been proposed heretofore. Not only the rules but the general suggestions on grading are worthy of careful reading by our Eastern beekeepers as well as those of the West. Here are the rules, together with the suggestions for grading:

NEW HONEY-GRADING RULES ADOPTED BY THE COLORADO STATE BEEKEEPERS' ASSOCIATION, DECEMBER 13, 1911.

FANCY WHITE.—Sections to be well filled, comb firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, combs, and cappings white, and not projecting beyond wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

NO. 1.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood; honey white or very light amber; comb and cappings from white to slightly off color; comb not projecting beyond the wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

CHOICE.—Sections to be well filled, combs firmly attached, not projecting beyond the wood, and entirely capped, except the outside row next to the wood; honey, comb, and cappings from white to amber, but not dark. Wood to be well cleaned; no section in this grade to weigh less than twelve ounces.

NO. 2.—This grade is composed of sections that are entirely capped, except row next to the wood, weighing from ten to twelve ounces; also of such sections that weigh 12 ounces or more and have not more than 50 uncapped cells all together, which must be filled; combs and cappings from white to amber in color but not dark; wood to be well cleaned.

EXTRACTED HONEY.—Must be thoroughly ripened, weigh 12 pounds per gallon. It must be well strained, and packed in new cans. It is classed as white, light amber, and amber.

STRAINED HONEY.—This is honey obtained from combs by all other means except the centrifugal extractors, and is classed as white, light amber, amber, and dark; it must be thoroughly ripened, and well strained. It may be put up in cans that previously have contained honey.

GRADING INSTRUCTIONS.—The aim of establishing grading rules is to secure uniformity in the methods of packing and grading, and thereby make it possible to put on the market a product of such excellence that careful buyers will pay top prices for it.

A few brief directions are deemed necessary to the parties doing the actual work of preparing, grading, and packing.

In removing filled supers the smoker must be kept well filled so no ashes will spot the cappings. Robber bees must be kept from them; and when piling supers up in the honey-house, one or several sheets of newspaper should be used between supers, to catch any possible drip and keep out dust and ants.

The shipping case adopted as the standard by the Colorado State Beekeepers' Association is the double-tier case with glass front, holding twenty-four sections, 4¼x4¼x1⅞ inches each. Use slim cement coated flat-head nails one inch long for nailing cases, put the best-looking side of grooved front strips to the outside, and select the best and smoothest finished boards for covers. If bottoms or cover boards should project, they must be planed off. This is necessary for proper loading. A sheet of plain paper goes into the bottom of the case, forming a tray; on top of this belongs a sheet of corrugated cardboard, corrugations up. On top of the lower tier of sections goes another paper tray and cardboard. Generally a sheet of corrugated cardboard is also furnished to lay on the top tier of sections. If this is not the case, and plain paper is used, it must not be permitted to stick out of the case.

The mark of the grade of honey must be put into both handholes of each case, as follows:

Fancy white must be marked XX in handholes.
Number one must be marked X in handholes.
Choice must be marked in handholes.
Number two must be marked II in handholes.

Sections must be well scraped. This means that all propolis (bee-glue) and beeswax must be removed from the edges and outside of all sections of honey. Some use a short and very sharp butcher-knife with broken point; others prefer a smaller knife with a *square* edge, kept square by the frequent use of a file. Sections that are badly mildewed must be put into the cull honey.

The cleaning and grading of honey must be done in a well-lighted place, but not in the direct rays of the sunlight. A well-ventilated and screened room with one or several large north windows is the ideal. No grading should be done by artificial light, because neither artificial light nor strong sunlight will enable a person to grade comb honey properly, owing to its transparency. A large bench or table is needed to give plenty of room for the work and the placing of shipping cases to pack the various grades in. Except for the fancy white it is necessary to have several cases for each grade on the bench so that honey of the same shade and finish will be cased together. Even in the No. 2 grade the packing of various shades of color in one case is bad work.

To avoid errors in casing, each grade should always have the same space on the bench, and cases should be marked with grade before covers are nailed on.

If possible one person only, with a good eye for color, should be entrusted with the work of grading the crop. The other work may be done by any number of persons. This plan secures uniformity of grading, and places the responsibility for this most important work on one person. The grader should be provided with a copy of the grading rules and

specimen sections, two or three of each grade, the poorest that are to go into each grade, have these specimens properly marked, and kept before the grader at all times, with instructions not to put any thing into a grade poorer than the specimens; and if in doubt about a section, to put it into the next lower grade.

A sensitive spring scales, with large dial, plainly indicating ½ ounces, is needed for weighing doubtful sections. A scales especially adapted for the work can be bought for $1.50. After using the scales for a short time most graders will find that but a small part of the crop needs to be weighed, as they soon get very efficient in judging weights.

The front sections of honey in a case must be alike in color and finish, and a true representation of the contents.

COMB HONEY NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second-hand cases.
Honey in badly stained sections.
Honey showing signs of granulation.
Leaking, injured, or patched-up sections.
Sections containing honeydew.
Sections with more than 50 uncapped cells, or a less number of empty cells.
Sections weighing less than the required weight. Such honey may be sold around home or rendered.

Don't put off. Case comb honey as soon as taken from the hives, and market while weather is warm. The early market is usually the best.

Don't haul without springs, and don't allow cases to get soiled or dusty.

Don't ship comb honey in less than car lots unless packed in carrier crates holding 8 cases each, with straw in bottom.

Don't ship by express, except very short distances. Freight is cheaper and just as safe.

Notice.—As practically all beekeepers are now using separators between each row of sections, no provisions are made in the grading rules for half and non-separatored honey.

TO EXTRACTED-HONEY PRODUCERS.—Do not get honey contaminated by excessive use of smoke.

Be sure honey is thoroughly ripened and well strained before putting into cans.

Put sixty pounds net in each five-gallon can.

Adopt the plan of marketing each extracting with a different number or letter, as there is usually a variation of color and flavor in the different extractings. If a good-sized sample is kept of each lot with the mark and number of cans in lot on it, it is easy to satisfy an intending purchaser as to quality and color.

Cases should be nailed with 7-penny cement-coated box nails; and for long-distance local shipment the ends should be strapped with band iron or wire.

The grading of any article, honey not excluded, is a simple matter if the person doing the grading will follow the golden rule and put himself in the place of the buyer.

We note that the foregoing rules differ from former ones in the following particulars: They now provide for a "fancy white." The old rules did not go further than No. 1 white. They also provide for another grade—namely, "choice," as an intermediate grading between 1 and 2. Grading "fancy white" and "No. 1" provides for combs being attached to all four sides of the section. This is a most excellent requirement, and will do much to avert trouble between the producer and the buyer. No comb should be considered fancy or No. 1 unless it is attached to all four sides. And, again, we notice that the new rules as well as the old ones place a limit as to weight. The old rules provided for the limit on the *case itself*. The new rules provide a limit on the individual *sections* themselves. A little consideration will show that this is a decided improvement. In the first place, a limit on the sections practically throws out all unseparatored or half-separatored honey. It renders it absolutely necessary, in order to get a grading of fancy and No. 1 and choice, that all supers on the hives be separatored. Any producer who will attempt to go along the old lines in the production of honey without separators or half separators will find his product barred by the Colorado rules as now revised. The individual limit set on the sections as to weight will shut him out, because he can not afford to put into his cases a 15, 16, or 17 ounce section and get a credit of only 13½ ounces. The underweight sections—those under 13½ ounces—will not be accepted at all. Under the old grading rules a ten-ounce section and a fifteen-ounce section could both go into the same case, providing the whole case of 24 sections weighed not less than 22 lbs. net. Clearly the unseparatored man is outclassed and ruled out. No more will the "average" be accepted. Hereafter every section in the case must come up to a certain limit; and not only that, combs must not project beyond the wood. They may weigh more than 13½ ounces, but must not weigh less.

Another very important suggestion is that for scraping the sections. It should have been incorporated in the rules, for it is very important. It would raise the standard of the goods put on the market and shut out the slovenly beekeeper who will not take the pains to put his goods up in proper shape.

We are not sure but Eastern beekeepers, with some slight modifications, perhaps, could adopt these rules to advantage. In our judgment it would be an excellent idea for a committee of representative beekeepers and a committee of representative buyers to meet in Chicago and agree on some uniform system of grading. Both committees should be made up of Eastern and Western men as well as representatives from the South. It will be impossible for the producers to adopt a set of rules unless the large buyers are willing to accept them. There should be friendly co-operation, to the end that there may be a uniformity of product and a clear understanding of what is meant by a "fancy," a No. 1, a "choice," and a No. 2. This will avoid a great deal of misunderstanding, lawsuits, and put the business of comb-honey production on a safe and sane basis. GLEANINGS will be glad to co-operate with any intelligent movement toward bringing about a uniform system of grading; and we suggest that the Colorado rules be used as a basis.

Stray Straws

Dr. C. C. Miller, Marengo, Ill.

June 14, instead of supers being now filled, no supers are on, and bees are not getting their daily bread.

Queen culture is the poetry of bee culture; and he who is not a queen-rearer has not yet enjoyed the beauties of beekeeping. *Deutsche Bzcht.* [Very true.—Ed.]

Nosema apis has not been taken very seriously on this side the water, although it has in Germany; and now comes a report of investigations by Dr. Graham-Smith, G. W. Bullamore, and others, that points strongly to nosema as the cause of the Isle-of-Wight disease.

Dr. G. F. White has finally cornered the culprit that causes European foul brood, and christened him *Bacillus pluton.* We now know that our old acquaintance, *Bacillus alvei,* is innocent of causing any bee disease, that *Bacillus larvae* is responsible for American foul brood, and I suppose Dr. White is hot foot after the fellow that gets up pickled brood. [See editorial comment on his bulletin last issue, page 360.—Ed.]

Walter S. Pouder, you seem to think Texas beekeepers will not ship bulk comb honey out of the State. I wonder, now, if you should advertise for a carload how long you would have to wait for it, and after you got it I wonder how much of it you could sell. A grand success in Texas may not succeed everywhere. [As a matter of fact, Texas bulk honey does not come up to the North. Northern consumers would not buy it, for the simple reason that they are not "educated" to it. If we can imagine that 50 or 75 per cent of the Texas population were to move up into New York, it is very probable that there would be a carload, or several of them, of Texas bulk honey shipped into York State.—Ed.]

Frank-Kleist colored the thorax of some 80 bees. He found them scattered all over the apiary, only a few remaining at their own home. More than that, a neighbor found two of the marked bees making themselves at home in his apiary an eighth of a mile distant.—*Leipzg. Bztg.,* 66. One may be easily deceived into thinking that an Italian queen is impurely mated because dark bees are found in the hive. Look on the combs for the downy little fellows that have just hatched. If they're all right the older ones don't count. [We have known that the bees of neighboring colonies will intermingle to some extent. Where young bees by mistake get into the wrong hive they are accepted without any hesitation; and it may be that old bees would be received in like manner. It is because of this intermingling that we have always advised treating the colonies neighboring to as well as the one affected with foul brood. Years ago, when we had disease in one of our yards, we would be pretty certain that the two or three colonies facing in the same direction, and right near the affected ones, would show up the disease sooner or later, simply because the bees of the diseased hive would carry the infection into the hives near by.—Ed.]

"Alius" quotes the "renowned American Root" as recommending zinc vessels for honey, and is severe upon such teaching. The first honey he ever extracted he allowed to stand over night in a zinc (galvanized iron) extractor, in a damp kitchen, and next day the surface of the honey for an inch in depth was thin, black as ink, and tasted abominably. Three-fourths of it had to be thrown away.—*Ill. Monatsb.,* 68, [We do not know where Alius got the impression that we recommend zinc or galvanized iron unqualifiedly for the storage of honey. We do know this: that galvanized iron is used very extensively by the California beekeepers in their mammoth storage tanks, which are large enough to hold from ten to twenty tons of honey. In these large tanks the exposure of the zinc to the honey is relatively small. We use galvanized iron and tin in our honey-extractors because it is not supposed that the honey is to be kept *stored* in such machines. The honey-gate should be left wide open always, so that the honey can run into some other container. We admit that, if an inch or so of honey were left standing in the bottom of a galvanized-iron extracting can for a considerable length of time, the honey might absorb enough of the zinc so it could be tasted. Whether it would be poisonous or not we have our doubts. If "Alius" will point out the place, either in Gleanings or in the A B C and X Y Z of Bee Culture, where we distinctly recommend galvanized iron for making up honey-storage tanks we shall be glad to have him do so. The fact is, our literature is supposed to show what is being used for the storage of honey with perfect safety. Some of our foreign readers, probably from their inability to understand properly our language, appear to misread and therefore misquote.—Ed.]

NOTES FROM CANADA

J. L. Byer, Mt. Joy, Ont.

That cover picture of the June 1st issue reminds me that, for some reason, raspberries here in Ontario do not yield honey to the same extent as reported in northern Michigan. While the raspberry is a good honey plant, yet it does not last very long; and as soon as clover comes into bloom the bees prefer the latter. By the way, I was talking to a friend a few weeks ago who formerly kept bees in northern Michigan, and in his opinion much of the "raspberry" honey of that section comes from milkweed and white clover. This claim is given without any comment on my part, as I know nothing personally about the matter. [The milkweed honey has quite a different flavor from the raspberry, as does also the white clover.—Ed.]

* * *

The editorial, page 327, June 1, regarding five-banded bees, is quite in order—not that I would pick out the advertisers of these bees for special criticism, but, rather, that we should insist on more careful advertising without the exaggeration so common to many who make claims for their goods in the press of the country. About the worst sinners in this respect are some of the advertisers in the poultry journals, and sometimes these same advertisers do not confine their efforts to poultry journals, but branch out in the bee journals. A person who answers an advertisement with hard cash has a right to receive just what the advertisement leads him to believe he will receive. Any thing less than that is fraud; and the writer of the advertisement, if he willfully misrepresents his goods, is, in plain English, a *liar* as well as a fraud.

* * *

An unusual number of demonstrations have been carried on in different Ontario apiaries this spring, and in most cases they have been well attended whenever weather was favorable. During the last week in May I was at two of these meetings in Hastings Co., and both were well attended, even though rain poured steadily all the time on the last day. While we could not open hives, yet we used empty hives and appliances for object lessons, and worked inside a building. As there were 20 or more beginners present on such a bad day, we wondered how many would have been there if the day had been fine. There is a source of pleasure in talking to a large number of enthusiastic beginners in a meeting of this kind, and almost unconsciously the demonstrator will try to give the very best that is in him, when an audience is so appreciative. While I have little time for work of this nature, I unhesitatingly plead guilty to having a liking for it aside from what little pecuniary recompense there is in the job. I well remember how I used to like to find out things about beekeeping (the desire is still present) and now it is always a source of pleasure to meet some youngster who is enthusiastic about bees, and any help that I can give him is always given with great pleasure.

* * *

Last year at this time (June 12) the weather was hot and the ground dry and hard. This year we had cool weather all through May with the exception of two hot days (23d and 24th), and June up to date has been much the same, with the exception of last week, when no rain has fallen. The season is very late, as only a few clover heads are showing; and any flow, if we should have one, can not possibly be on before June 25, at the earliest. Clover is good wherever there is any; basswood is showing lots of buds, and there will be more than the usual acreage of buckwheat in many sections where the wet weather prevented seeding with other grain. This will not be in evidence in our locality so much, as most of our land is tile-drained, and the wet weather did not hamper the farmers so much. However, we look for quite an acreage of buckwheat on account of many farmers sowing their summer fallows with this plant in an effort to kill many of the weeds which seem to be on the increase of late years. At the east yard, the blueweed is in evidence as usual, and the prospects are good for basswood, of which there is an abundance in that section. Up north 100 miles, where I have one apiary, the prospects are good for all the usual sources of nectar—especially so for alsike and white clover.

While we have mentioned more than once that the prospects are poor at the home yards here in York Co., with good strong colonies we may perhaps get some surplus after all. At any rate, before the next batch of copy comes for Gleanings the question will have been decided one way or the other.

Beekeeping Among the Rockies

Wesley Foster, Boulder, Colo.

The beemen of Fremont County have an energetic inspector in Mr. Flo. Brainard. Mr. Brainard inspected over 100 apiaries in 1911, containing about 1000 colonies. The foul-brood situation looks much better than last year, and within a short time it is probable that the loss will be reduced to the minimum. Mr. Brainard operates about 200 colonies of bees, and has a 7½-acre fruit place. He sells the most of his honey and fruit in the Cripple Creek mining country, and gets a better price than most Colorado beemen.

* * *

A good many bees have been killed by the fruitmen in the Canon City fruit districts by spraying with arsenate of lead for the leaf-roller. Probably some colonies will be depleted in strength, but few killed completely. The leaf-roller is a very serious pest, and the fruitmen feel that spraying is the only way to save their orchards from total destruction. They admit, however, that the spray is killing only a few of the rollers, but as long as they kill a few, some will continue to spray. Not all spray when the trees reach full bloom, although I saw two orchards in bloom being sprayed. Very few fruitmen now spray for codling moth at a time when the bees can be injured.

* * *

May 10 sweet clover was up one foot at Canon City, and colonies averaged four to six frames of brood. Freezing weather had hardly passed either. Canon City is further along with the season than any other part of the State. It is the distributing point for spring weather in Colorado. And there is one thing I want to say about this Canon City district. It is the most highly developed rural section of the State—perfect roads, rural delivery, tidy, comfortable homes (the houses are not oversize, as is so common in many rural communities), rural phones, small fruit-farms that are not a burden in caring for them. The climate is Californian with the rainy season left out. Canon City is a rural town; the town folks are the same as the country folks, and I'll dare any one to tell where the city limits of Canon City are. The town and country are one, and blend into each other imperceptibly. The town folks have the country spirit, and the country folks have the city advantages. I am often told that Boulder is the prettiest town in Colorado. If Boulder had the fruit district of Canon City surrounding it, my home town would be the best place on earth.

WINTER LOSSES AND HONEY PROSPECTS.

Bees have not wintered very satisfactorily, and in a number of places spring dwindling is depleting the colonies. The losses amount to about 25 per cent in the Platte Valley from Denver to Sterling. Some reports give a loss of 50 per cent near Sterling. While I have no report on the percentage of loss in the Arkansas Valley, word has come to me that bees did not winter well in that section. Several Wyoming beemen have written to me wanting to buy bees, and one gentleman said his losses had been heavy. From the low temperature recorded last winter in Wyoming, and the fact that most of the bees are kept in single-walled hives, heavy losses would naturally be expected. Some Idaho beemen are after more bees, partly due to loss of colonies and partly to a desire on the part of some to expand their operations. Idaho suffers as does Colorado, and doubtless other States, from overstocking in one locality and a lack of colonies in another. I can not say whether Utah beemen have suffered any losses or not, as I have no reports; but parts of the western slope of Colorado have had heavy losses, the largest loss being Montrose, where the mortality in a few apiaries was 50 per cent with many weak colonies trying hard to survive during the month of May.

I am writing this May 12, and the Montrose men say that two or three frames of brood are about as much as can be found at this time. Some hives have more and some less. It should be said here that the season is at least three weeks late, and there is still hope; but the backward season is playing "hob" with the weak "uns."

Now, in my judgment the prospects are good, there is an abundance of water for irrigation, and sweet clover is coming up as well as if not better than usual. This does not seem to be the case near Denver, but is true everywhere else that I have observed. The price of hay (alfalfa) is now $18.00 to $20.00, and at such a price the farmers will not leave the first cutting till it can bloom.

The fruit bloom is coming out in a gratifying manner, and a great fruit yield is expected if no freezing occurs. The fruit bloom is of considerable importance to the bee interests where it abounds, and stimulation to breeding and early swarming is the result. It seems here in the West that the swarming problem is a *problem* only in the regions of fruit bloom.

BEEKEEPING IN CALIFORNIA

P. C. CHADWICK, Redlands, Cal.

In seven days after the sage weevil got fairly started, the sage was out of commission, with thousands upon thousands of buds destroyed that never matured.

* * *

GIVE PROF. COOK TIME TO MAKE GOOD.

From items that have appeared in various California publications it seems that State Horticultural Commissioner Cook, whom we know familiarly as Prof. Cook, has caused a storm of protest, some of which might be termed almost mild abuse, by summarily removing Chief Deputy Quarantine Officer E. O. Brenner. Mr. Brenner apparently had the confidence of fruit men over the entire State, and there seems to be no question about his successor, as shown by the following quotation from the California *Fruit Grower:* "Commissioner Cook has appointed, to succeed Mr. Brenner, the latter's deputy, Frederick Maskew." Also from the same column I read further on, "The criticism in this matter does not reflect in any way upon Mr. Maskew, however." From the above it seems that, while no one questions the ability of Mr. Brenner's successor, all are flaying Dr. Cook for Mr. Brenner's removal. Owing to the long service of Prof. Cook, and our knowledge of his ability as well as integrity, beekeepers will be slow to condemn until he has had time to get his forces in working order and prove his actions. Surely we are not ready to admit that Mr. Brenner is the only capable man California has for this position. Dr. Cook was not appointed for political reasons, but for his unquestionable ability, and he was appointed by Gov. Johnson, in whom the great majority of California people have unbounded confidence. It is true that some of his appointees have not been satisfactory to all, yet they seem to "make good" in the end; so let us reserve our judgment until Dr. Cook has had sufficient time to "make good."

* * *

CARLOAD SHIPMENTS OF BEES FROM UTAH TO THE ORANGE GROVES OF CALIFORNIA.

Serious objection to the shipment of bees from Utah and Nevada to our orange groves, for early spring breeding, has developed. A part of this is based on the fear that disease may be brought in, and the rest because of the danger of overstocking our ranges. The former is an objection worthy of serious consideration; but this could be easily overcome with prompt inspection by a competent inspector who could destroy all diseased bees and honey. Now note, I said, *"bees and honey,"* not hives and wax. A short time ago I read of an injunction that had been served on an inspector at Lindsay, Cal., to prevent the burning of 300 colonies of bees. It makes my blood boil when I hear of an inspector burning up bees, hives, and all. The hives are worth at least $1.50 each, or a total of $450. Eighteen combs per extracting colony will produce 5 lbs. of wax worth 25 cts. per lb., or $1.25 per colony, $375, or a total loss to owner $825. This is not only an economic waste, but useless destruction —absolutely useless—and practiced simply to get rid of the disease the quickest and easiest way possible, regardless of the loss to the owner. Why can not common horse sense be used in these matters? People do not burn a house because it has been infected with disease. Why not? Because it can be disinfected and made habitable again. So can a hive.

As to overstocking, it might be well for some of our local men to observe what used to be considered a beekeeper's moral right to a territory within reasonable range of his location, but which at this time is totally disregarded, there being at this time hundreds of colonies moved into the orange from the sage-fields that will probably be left on my range the entire season, owing to the failure of the sage. The Redlands orange district will support 40,000 colonies, if properly distributed, during the orange flow. But the range I am on is only sufficient for my bees to get a good living after the orange is over, and I must suffer more from this overstocking of my range this summer than thousands of colonies from Utah and Nevada would cause during the orange flow.

No man should expect his rights to be considered who does not consider the rights of others. But when tons of orange honey is going to waste daily we can supply many thousands of colonies better than we can a few hundred extra on our ranges during the summer months. Mr. M. A. Gill, of comb-honey fame, said at the banquet-table during the California State convention, "Boys, come on to Utah if you wish; we can take care of part of you but not all." Let us be as liberal, and say, in return, "Boys of Utah and Nevada, come over to the orange groves if you like, and build up your bees; we can take care of most of you, and we may want to take our bees and go home with you to share your benefits."

Conversations with Doolittle

At Borodino, New York.

WHAT ARE SUPERS AND UPPER STORIES?

"What is meant by supers?"

"In the Standard Dictionary I find that a super is, 1, Above in position; 2, Above in degree or amount."

"Then when the term as applied to bees it would mean the putting of an extra hive of combs above the hive the bees were already at work in, would it not?"

"Yes, if no specifications were made. But that would generally be called 'putting on an extra story;' or making a single hive into a two-story one. If another hive were put on, it would be called a three-story hive.

"Some beekeepers call what you term a two-story hive a hive with a super on; others talk about supers for extracted honey, and still others about supers of sections, either empty or with baits. Will you please explain this matter so we beginners can understand what you veterans are talking about?"

"A two-story hive could very properly be called a hive having a super on it for extracted honey. But a super for extracted honey is not always the same depth as the hive proper, for very many of our best apiarists use a much shallower box, although of the same dimensions otherwise, than the hive below. Hence the term 'extracting super' generally means any receptacle holding combs, and it may be from one-half to two-thirds of the depth of the hive below. If this super is not filled with combs already drawn out it would probably be called an empty super, from which the veterans would expect that the frames used in it would either have starters in them or else be filled with comb foundation. However, in this case it would be better to say that a super with frames having starters in them, or a super with frames of foundation, was put on top of the brood-chamber.

"A super of sections is a box, generally of the same dimensions as the hive, except as to depth, filled with sections to hold the *comb* honey. This super is made a *beeway* deeper than the sections are tall, and in this way one, two, three, or more supers of sections can be piled up above the hive or brood-chamber. A super of empty sections would be understood to mean that the sections had only starters in them. The veteran might also understand that each section was filled with very thin comb foundation; but where this is the case, the expression 'filled with foundation' is generally used. 'Bait sections' are sections in which the bees have worked the season previous, drawing out the foundation or building comb therein, yet not finishing their work to an extent sufficient to make the honey in the section marketable. The honey is removed from these unfinished sections generally, by having them cleaned out by the bees in the fall. Then one section, filled with this now empty comb, is put in the center of each section super put on at the beginning of the season. This empty comb has a drawing tendency, and the bees begin work in the sections much sooner than if only starters or full sheets of foundation were used.

"When I began keeping bees, forty-three years ago, comb foundation was unknown. Then comb of the worker size of cells was cut into strips about one inch thick, and by means of melted wax was attached to the under side of the top-bars of the frames. These were frames having starters in. For starters for comb honey, only *white* comb was used, no matter as to the size of the cells; and this was, with melted wax, attached to the under side of the tops of the sections. These white combs were cut into triangular pieces, the size of each being in proportion to the amount of white comb on hand. With the advent of comb foundation this was used instead of these starters, a strip of about an inch in width being considered the best for frames, and a triangle of about 1½ inches on each side as being right for the sections. However, of late years there are few beekeepers who do not fill the sections nearly full of foundation."

"You said one section should be used as a bait. What about the expression 'supers with baits,' as it is often used?"

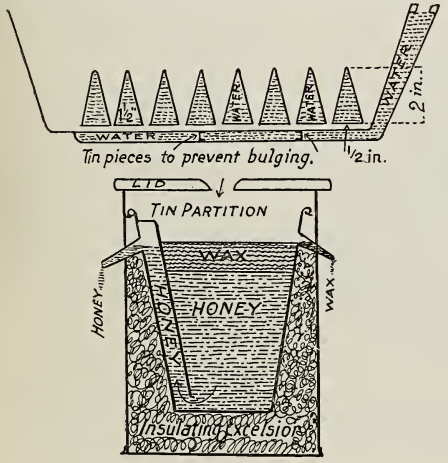
"It may mean forty supers of sections, each super having one section of drawn comb in it. But it would be more apt to mean that each super had more than one bait section in it. If one bait section has a drawing tendency for the bees, more of them will draw harder. The tendency is to draw the bees from the brood-chamber at the beginning of the honey-flow, so that work will not only be begun in the sections sooner, but that the swarming fever need not be contracted, as it almost always is by the massing of the bees in the brood-chamber at this time in the season. For this purpose four baits are much better than one, and four times four very much better yet. If the entire super can have all the sections full of clean, nicely built combs from the year before, the swarming tendency would be very largely overcome." '

General Correspondence

THE ADVANTAGE OF TRIANGULAR TUBES IN A CAPPING-MELTER

BY F. A. POWERS

Mr. F. J. Severin's capping-melter, described Dec. 1, p. 722, is in the main modeled after one that I made. He has made an improvement in placing the gasoline-tank off the stove outside the building; also in using a wooden block in the top of the hole where the knives are heated. But in some important points the Severin machine is faulty. The space between the tubes should be ⅛ inch instead of ¼. If the spaces are larger than ⅛ inch, bits of cappings will pass through and slide out at the spout without being melted. Then the spout should be the full width of the machine, just a continuation of the bottom that the honey and wax fall on after passing through between the pipes. This makes it easy to clean out the space under the pipes. The triangular shape for the pipes is better



than the square, for the reason that the cappings that pass between the pipes are melted by the heat from the flat under surface of the pipes as the cappings slide along under them.

The place where the knives are heated should be larger, or extend clear across the machine, so that the evaporation will not lower the water so fast. The picture on page 724, Dec. 1, is a pretty fair representation of my own machine except for the changes I have mentioned. It is rather larger than is necessary, as eight pipes 18¼ inches long are all that two gasoline-burners will heat, and it will take two good uncappers to keep the water from boiling, even with the burner going full blast. The water should never boil.

AN UNCAPPING KNIFE THAT HOLDS THE HEAT

To make an uncapping knife to use with this machine I solder a good thick sheet of copper to the flat side of a Bingham knife, letting it extend to within 1-16 inch of the edge, and bevel it off. The knife will then hold heat long enough to uncap both sides of a comb, and the copper will convey it to the edge, where it is wanted.

AN INSULATED SEPARATOR.

The lower drawing represents a wax-separator to use in connection with this melter. It is a 10-lb. lard-can with a piece of tin soldered on the inside to divide it in two parts, the tin extending to within ¾ inch of the bottom. The can is inclosed in a box with insulating between the box and the can. This arrangement does not injure the honey if kept going pretty lively; but otherwise the honey and wax remain in the separator so long that the honey is slightly injured.

Parma, Idaho.

A CAPPING-MELTER DESIGNED TO AFFORD A QUICK EXIT FOR THE HONEY AND WAX

Description of Comb and Capping-melter

BY H. BARTLETT-MILLER.

Having been blessed one season with a large harvest from about a hundred colonies, only to discover that the honey was non-extractable, and having had to leave during last year all my clover honey on the hives till winter, when it became as solid as a board, I determined to invent an improvement upon all the comb or capping melters of which I had read.

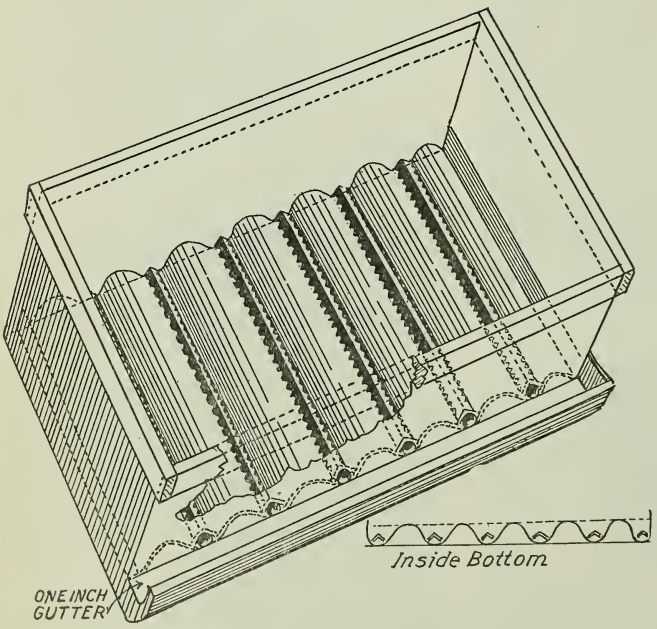
I had seen home-made melters—big, ponderous, and awkward. Truly they were "fearfully and wonderfully made," and worked—*sometimes*. Heat, radiated from a melter, I considered intolerable to the operator, besides being a source of waste. Therefore as a water-jacketed wall was meant to radiate heat inward in order to melt honey, it must also radiate exactly as much outward, resulting in unbearably stuffy honey-houses. So I eliminated the water-jacketed wall. There remained only the bottom, which, perforce, must be made larger to offset the lost heating surface of the walls. But a bottom too large meant hot honey blocked from the exit till it be-

came more or less deteriorated. Then, too, a large exit had to be provided for the pollen and slumgum. My final plan was to increase the bottom surface by ridging it and putting a piece of angle iron loose in each gutter made by the ridges to carry away all melted honey as soon as it could run.

Previous experience had taught me that the outside, or what I term the "receiving gutter," must be water-jacketed. The experience was not my own, however, but that of a friend whom I found down on the floor of his honey-room muttering language "not loud but deep" while he shoveled up about 50 lbs. of cold wax and honey which had overrun through the wax, chilling and stopping the gutter.

This melter of mine radiates no noticeable heat, as the sides containing water are nowhere higher than about three inches; and the necessity for inclosing it in any sort of box is entirely obviated. Any handy man can make his own. I made mine in a few hours. All the soldering to be done is around the inside, on the ridged bottom, the ends of the gutter, of which one, of course, and the corners of the container itself, is blocked up.

To bend the bottom I nailed a piece of stout timber on a bench so that a sheet of galvanized iron would go under; and, having marked crosslines the full width of the bottom, three inches apart and exactly parallel, I just bent the iron to the marks up and down the ridges and gutters being thus rounded, as it is not important to hammer each bend to an acute angle. I thus obtained considerably more heating surface than the bare length of the bottom. As soon as the honey and wax melt they run down the slope of the gutter, and are received beneath the angle iron or bridge piece, made by bending at right angles pieces of iron about 1½ or 2 inches wide, and as long as each gutter, and notching the edges deep enough to allow a full cell of pollen to get through. The flow of the honey carries along all the slumgum to the exit into the receiving trough through the holes in the side of the melter at the end of each gutter. After the bottom is soldered in, cut or drill for each channel iron a ¾-inch hole in the wall of the melter on the receiving-trough side, and file the bottom of this hole to the shape of the bottom of each gutter so that no projection may prevent any solid matter floating into the receiving trough.



I made my melter wide enough from front to back (the receiving-trough side being front), so that an L. frame would rest inside the melter, and deep enough to clear the bottom by three inches, so as to hold frames while a good layer of honey was melting. My melter has nine gutters; but it could be made any length if not too cumbersome.

Besides the holes for exit from the channel iron to the receiving trough, one should be punched at one end into the water compartment and a small funnel piece soldered on for a filler. The bottoms of the gutters need not be more than one inch above the true bottom. This will bring the ridges about three inches above the bottom; and with the large heating surface the thin layer of water heats quickly, so that, when in full swing, the ridges are nearly always full of live steam beneath, and all pollen and solid matter run outside without that damming back of melted honey, which is the one great drawback with many melters I have seen planned, unless they are too slow for practical purposes.

When old brood-combs are melted, the cocoons, after some four hours' work, stick to the bottoms of the notches on the sides of the channel irons, and it is wise at each midday stop to clean this out. It does not take more than five minutes. I use for this purpose a piece of wood cut to fit the gutters. I had, perhaps, an extra lot of this to contend with, because I always lift up the brood-chamber except one frame, to prevent swarming; and, of course, the pollen was simply filled over with honey. Yet I melted over 700 lbs. of honey from such combs in four hours, cutting the combs from wired frames, and leaving the wires in the frames. The melter often got ahead of me, running empty except for a little rubbish. If I ever make another it will have twelve gutters so I can fill it up and leave it for half an hour. This one of nine gutters is such a glutton that it needs constant feeding.

It is well, when the soldering is finished, to make a frame of 2x⅞ stuff, and run a sawkerf all around the middle of one edge to fit the top edge of the melter. Then drive a few fine nails through both wood and iron. The top is thus nicely stiffened, and a handle made for carrying.

I have not mentioned the honey and wax separating vessel, as all practical men know how to manage that part of the business. For a shelf or support to work on I cut a piece of ⅞ stuff to fit over the top frame with a notch at each end, so I can slide it from end to end. I bore a hole about six inches from one end to push the end of the frame in, and cut out the combs. I have not tried cappings, but I know the melter would simply romp away with them. For heating I use a blow-torch. It is noisy, but it makes the honey run, and there is no discoloration. The honey really does not have time to get discolored. I have yet to find any bad effect from the zinc in the galvanized iron. As a student of chemistry I know zinc is harmless in this case.

The angle irons must be soldered in pairs or more at one end by a narrow strip extending over a ridge or ridges, and attached to the top of the angle iron; otherwise, instead of straddling the gutters they would fall over, so that both notched edges would be lying on one slope. It is advisable to remove all slumgum at any long stoppage, because while it does not interfere with the *flow* of the melted honey, any great amount of it would stain any white honey going through it. All my clover honey was in comb built from starters in wired frames intended to be kept for extracting only, as mostly drone was built. It was produced above excluders; had a small amount of pollen, and was absolutely as white when put up after the melting as if I had extracted it in the usual way. The non-extractable lot of last year's crop was slightly darkened after about six hours' run without cleaning; but it was dark before melting any way, as it was in old brood combs.

Kihikihi, N. Z.

[This melter is somewhat similar to the one described by J. W. George, p. 667, Nov. 1, 1909, except that the "gutters" are deeper and there is an exit at the end of each one. The plan described by Mr. Powers in the preceding article would probably be more efficient still.—Ed.]

HOW TO GET RID OF CAPPINGS

Some Experience with Draining-cans Made of Galvanized Wash-tubs; a Capping-press

BY MAJOR SHALLARD

The ordinary uncapping-box, like the McIntyre, with wire screen to drain out the honey, has never appeared to me to be a good utensil. It is too bulky; it is hard to get the cappings out of it; and when they are out, and it is not in use, it takes up a lot of room. If it is lined with tin, care must be taken that it does not rust. If one takes the cappings out with his hands it is a messy job; and if a spade is used, there is danger of injuring the fixings.

My first uncapping-can (in 1884) was like Dadant's. I did not like it. Any cappings that were left in it over night had to be taken out, because it would not do to put fresh cappings on top. It was hard to empty by hand; and, on account of its depth, a spade could not be used. Then when not in use it had to be kept inside, taking up valuable room. I discarded it and got ordinary galvanized wash-tubs. When these tubs are not in use they can be packed one in another, and left outside in all kinds of weather. They make a compact parcel to take to outyards, and afford an easy way to carry cappings home. I got the largest tub on the market and one of the second size, and punched the bottom of the larger one as full of holes as possible, with the tang of a file. I shall never forget the look of astonishment on the salesman's face when, after buying the tubs (I bought 18, as I was running 800 hives at the time). I punched several holes in the bottom of a large one. I put this large one into the smaller one, and it fit tight. The large tub is 28 inches across the top by 12 deep; the small one is 26 inches by the same depth. The large tub will hold all the cappings from 500 combs. I got two pieces of wood 32 inches long, 1½ wide, and one inch

thick. I nailed these together 9 inches apart, and slipped the ends of one piece through the handles of the tub, thus holding it in position for uncapping. After the day's work is done this is taken off the top. The top tub is lifted, and the wood put between. In the morning the bottom tub is nearly full of honey. The top tub is lifted off and put into another small tub and left to drain. The tub with the honey in is lifted up to the extractor and poured through it into the tank. When another tub of cappings is ready it is placed on top of the first lot, and so on.

I used this method for some time, and then I got tired of having cappings around. The rats got at them; also the moths, and they were always an incentive to the bees to rob, and so I made a press. The box is of 1¼-inch stuff, halved at the corners, and nailed both ways. It is 17x12x17 inches each way. The sides are lined with slats running from top to bottom. Across the bottom three pieces of 3x1 hard wood are nailed, and across these more slats. This box stands on a 4x4 hard-wood frame. The two uprights that carry the crossarm at the top are mortised through this frame and fastened with wooden pins so that, when the pressure is applied (with a carpenter's iron bench-screw), it pulls this frame and the crossarm toward each other, and does not shove the slatted bottom off the box. The follower is a square box made of inch wood to fit the press, and is 11 inches deep. It has a piece of 3x2 hard wood let in under the lid, and another piece on the same side, inside the bottom, to take the strain. The 4x4 frame stands on legs, and there is a galvanized-iron tray (to catch the honey) which holds 60 lbs. After I got this press at work, instead of standing the tub or tubs of cappings away in the corner they were lifted over to the press and the cappings shoveled into half a chaff bag, and the honey pressed out. The shovel may be allowed to slide right along the bottom of these tubs, and it will not hurt them a bit.

The cakes of cappings come out as hard as a stone, 17x17x3 inches, as the press is strong enough to allow the most powerful man to screw it down as hard as he is able.

To give some idea of the strain, I might mention that we broke several crossbars, made of ironbark, 6x2½ inches. Since then I have made one 6x4 of the same wood, and no one is strong enough yet to break that. I got some boxes with lids to store the cakes in; but they were not satisfactory. The rats gnawed holes through them, and some hives were filled too full, and the lid would not shut, so I got a square iron tank. These are procurable all over Australia. They are made of one-sixteenth black iron riveted together, and are 4x4x4 feet, and 3x3x3 feet, with a manhole in the top, and a close-fitting lid. The one I got had a crack in the corner where the iron had split when being folded; and when it got hot from the sun (it is kept in the open) more honey ran out of the cakes and out of this crack. When I found this I tipped the tank toward that corner, and now the bees do a regular business when there is no flow on. I know of no practical way of getting *all* the honey from the cappings. I have carried the tubs out, and have let the bees get at the bottoms after we had finished extracting, and they got the most of it; but I doubt if the game is worth the candle.

For many years I used solar extractors to get the wax from the cappings, until I found that a friend was getting more wax from much fewer bees by boiling the cappings in a bag, the same as depicted in the A B C and X Y Z of Bee Culture. I then tried treating the slumgum; but the result was not satisfactory. I got a block of dark-gray wax; and after treating this with acid I got three-fifths light and the rest rubbish. Then I tried treating the whole lot in the bags the same as my friend did; but I did not like that either. Then I tried tipping the whole lot into a copper and treating it with acid the same as mentioned in the A B C book; but in that description cakes were put in without refuse. I dipped off all I could, but found too much left behind to cool, mixed with refuse. I thought the honey had something to do with this result, so I soaked my cappings in bags in the creek for 48 hours, and the result was much better. Still, it was not satisfactory. Then I altered it. I dipped off what I could, and put the rest through the press; and, judging from appearance, there is but very little wax in the refuse. This is much the best method so far, but it is not satisfactory. It is too slow, and there is too much labor, so I have purchased a German wax-press, and I mean to see if that will help to expedite matters.

South Woodburn, N. S. W., April 16.

[From experiments that we made, it seemed to us that it is a pretty slow process to press the honey from the cappings. On this account we prefer the capping-melter; for, although certain kinds of honey are injured slightly, one can hardly tell the difference unless the honey has been allowed to stand a long time in the melter or in contact with the hot wax, and the results every other way are certainly much more satisfactory.—Ed.]

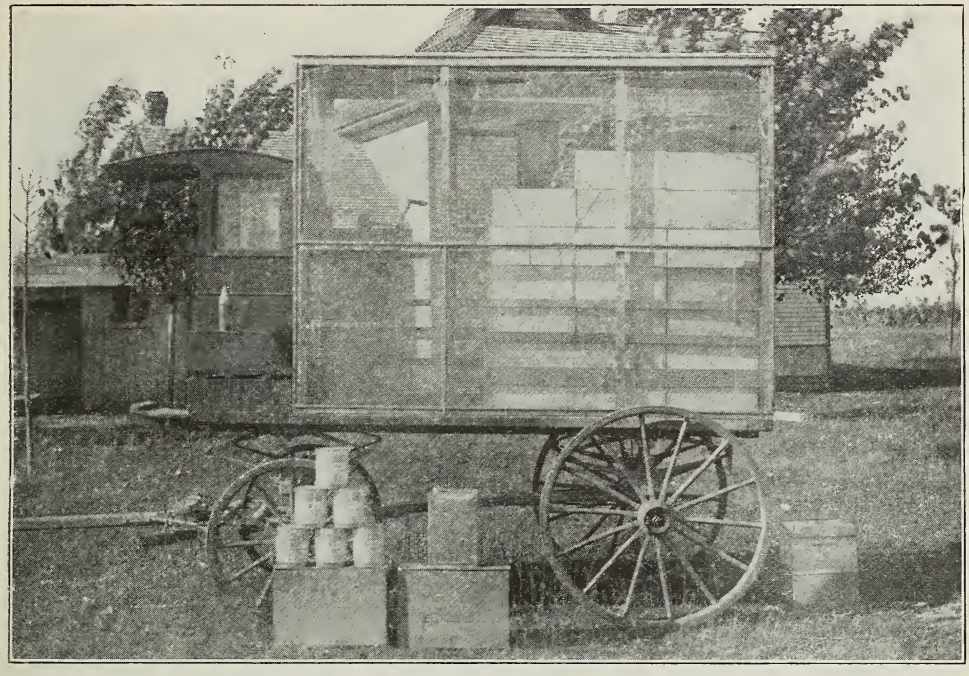


Fig. 1.—Portable extracting outfit of Geo. H. Kirkpatrick, Rapid City, Mich.

AN EXTRACTING-OUTFIT ON A LIGHT SPRING WAGON

BY GEO. H. KIRKPATRICK

When I first established a system of outyards it was my practice to build honey-houses at each yard; but I have discontinued their use for various reasons. The lumbermen cut away the timber, then the raspberries follow; but these fail when the farmer clears the land and fits it for the plow, so that the beekeeper must move on to a new location. For three years, therefore, I have used the extracting-wagon as shown in Fig. 1. The framework for the top is the same length and breadth as the platform, and 6 feet 4 inches thick. The top is covered with canvas, and the sides and ends with wire screen, the door being in the back end.

Toward the front of the wagon is a tank which has a capacity of 700 lbs., on the top of which is an uncapping-can. The tank is fitted with a gravity strainer, and the honey is drawn from a gate under the wagon. With my two-frame automatic extractor I can, with the help of two boys, remove from the hives, extract, and put in cans, 2000 lbs. of honey per day.

When the honey in the upper super is nearly all capped we begin extracting. Thirty-four 60-lb. cans in the wheelbarrow are placed in the wagon, the team hitched on, and the boys and I are off to an outyard. When we arrive, a convenient place is chosen for the wagon. We find it is always best to locate it where the ground has a little slope, as it is easier for the team to move it when it is loaded. When the whole outfit is located, an adjustable post is placed under each of the four corners of the wagon to hold it steady. As the supers are carried in, they are placed on the right side of the wagon and transferred to the left side when emptied.

Fig. 2 shows eleven colonies at the close of an eleven-day flow from milkweed in July, 1911. These eleven colonies produced 1320 lbs. in this time.

MOVING TO FALL PASTURE

The harvest of raspberry and milkweed closes about the middle of July. We extract the honey and get it into the cans as quickly as possible, then prepare about half of the colonies at each apiary and move them to buckwheat or the willow-herb. A queen-excluder is placed over the brood-chamber, a super containing a full set of combs is put on, and a wire screen set on top. A wire screen for the entrance is also dropped before each colony. When the bees have stopped flying late in the evening, I take a hammer and smoker and a few crate staples, and soon have thirty colonies

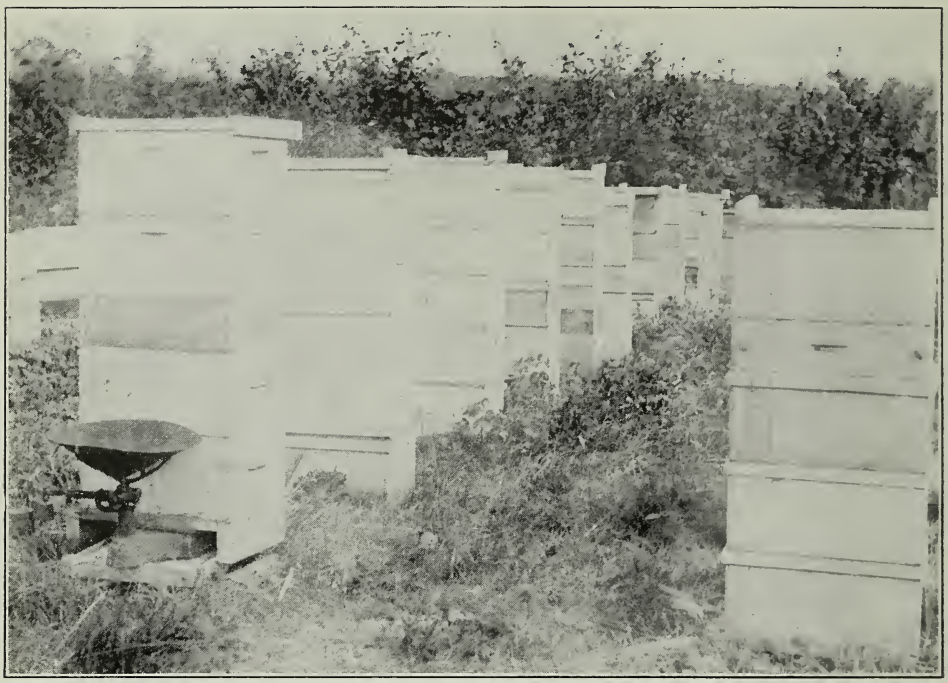


Fig. 2.—Eleven colonies that produced 1320 pounds of milkweed honey in eleven days.

ready to load. I first close the entrance, then fasten the bottom of the super, and finally the screen, using the crate staples to do this. I load the bees in the evening and move them the following day.

Fig. 3 shows my wagon built especially for hauling bees. Not many beekeepers use spring wagons, but I use no other. The load shown in this illustration was drawn seven miles; and when I was within a few miles of my destination I was so unfortunate as to throw from the wagon eleven colonies. I am a lover of the camera, and carry one with me nearly every time, and I brought it into play at once, as shown in Fig. 4. This was in hard-timber stubble land where the red raspberry flourishes.

Fig. 5 shows a load of supers. A ⅜-inch rope is passed around the load a few times and made fast by tying the two ends together. The slack is then taken up by drawing the rope down at one point and upward at another, forming a zig-zag line which is held in place by nails driven above and below.

RADISH HONEY

Early in the season of 1911 I learned that an agent, sent out by a seed company, had contracted with the farmers in an adjoining township to grow radishes for seed, 300 acres being grown within an area of nine square miles. Wishing to know whether the radish is a honey-plant I moved 32 colonies to this location. Owing to the early and late planting, the blossoming began in July and continued until frost. I made three visits to this apiary during the season, and each time found many bees working on the radish bloom. It is a good pollen-producer, but I fear it does not amount to much for honey. I extracted some honey and found it of good body and fair flavor, though a bit spicy, and the color was light cherry red.

Rapid City, Mich.

DRAINING OUT MOST OF THE HONEY BEFORE MELTING THE CAPPINGS

A Combined Uncapping-box and Capping-Melter

BY E. L. SECHRIST

Honey, in this locality, granulates so quickly that cappings become one solid mass in a very few days if allowed to stand and drain, so some kind of capping-melter seems necessary.

The two I have used this season were very satisfactory, both being of the same design, one 5 feet, the other 6 feet long. Seven or eight feet might be even better if there were space in the extracting-room for

it. They are easily made, and not expensive.

It is, in principle, a McIntyre uncapping box combined with a melter, the melter being confined to a space of two feet at one end of the box, under which is a water-tank to be heated by a one-burner oil-stove.

The box is 6 ft. long by 2 ft. wide, of 7/8 inch boards, 12 inches wide, nailed to 2x4 legs 32 inches long. The bottom is a sheet of galvanized iron with edges turned up from 1 inch at the rear to 3 inches at the front, then turned outward 1 inch for nailing to the bottom edge of the box. This gives a drop of 2 inches from the rear to the wax outlet. This pan is nailed to the bottom edge of the box, and another board is nailed to the legs below the iron, as shown, supporting the iron bottom. At the heater end there is a box enclosing the stove to prevent drafts and to confine the heat. A door admits of lighting the stove and of removing the oil-tank for filling.

One side of the water-tank projects beyond the box, forming a place for filling the tank in which knives may be heated.

A two-inch-high partition or honey-stop is soldered in V shape to the top of the galvanized iron pan, separating the draining space from the melter proper. At the inner point of the honey-stop is a hole where the honey draining from the cappings runs down into a little half-round trough under the iron bottom, and thence into a bucket at the side of the box.

I use a 1/4-inch-mesh wire screen over the 4x2-foot draining surface; but a slatted drain board may be used if desired.

When working, the cappings fall on any part of the draining surface; and as they drain they are shoved along toward the melter, finally being shoved off the draining-screen, which rests on the honey-stop, separating the draining surface from the melter, and dropping on the heated melter, where they gradually melt, and wax and honey run down the inclined surface into the wax-separator.

About three-fourths of the honey will drain from the cappings and run out of the side spout, never being heated at all. The remainder of the honey runs out with the melted wax, and is a shade darker and a bit off in flavor from being heated with the dark cappings. We kept this heated honey separate in extracting the lighter grades of honey; but with the darker grades we put it with that which came from the extractor and draining surface.

In uncapping 1500 lbs., about 10 to 15 gallons of honey will drain from the cappings before they reach the melter. If not

Fig. 3.—Kirkpatrick's wagon, built especially for moving bees.

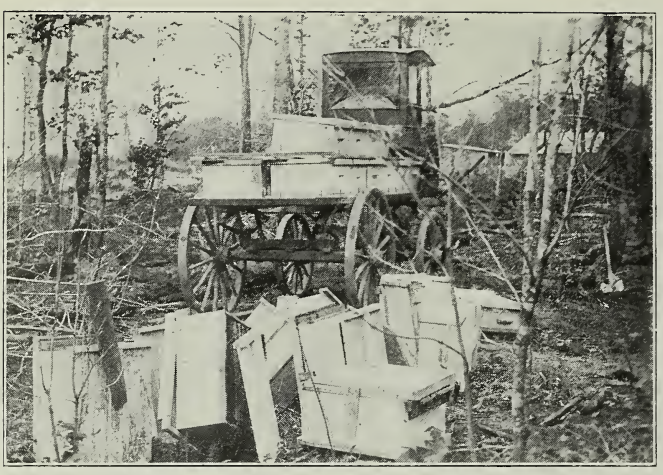


Fig. 4.—Eleven colonies tipped off by accident.

more than 1800 or 2000 lbs. is extracted in one day, the cappings may drain over night and melting begin the next morning.

I like this melter, because while it serves, primarily, as an uncapping-box and drainer, getting out as much of the honey unheated as can drain out in the time allowed for draining, which depends on the length of the box and the rapidity of extracting, there is no extra apparatus required for melting, and no handling of sticky, messy cappings from one box to another.

The cappings are entirely cleaned up in the one machine, and with proper wax-separators the cakes of wax may be removed as they cool. The warm honey goes into the strainer.

In this locality the nights are often so cool that extracting early in the morning is not practicable, as the honey will not go through the strainer. There are many days, also, that are so cool that honey can not be thrown out clean from the combs with the hand extractor. The power extractor will throw out the thick honey, and I am planning to heat all my honey, next season, before it goes into the strainer. Our thick alfalfa honey, when cold, goes through the strainer slowly and clogs up the cloths very quickly, and the gravity strainer is not practical for our use. Has anybody used such a heater?

Locality is such a varying factor that

Fig. 5.—Load of supers secured with a rope.

One of E. L. Sechrist's apiaries, Clarksburg, Cal.

what is entirely practical in one place is useless in another. For instance, we could never think of producing bulk comb honey, as much of our honey granulates from two days to a week after being taken from the combs, and granulates in the combs in a month; so with bulk comb honey we should have a solid, unsalable mass.

Clarksburg, Yolo Co., Cal.

IS A HIGH PRICE FOR HONEY ALTOGETHER DESIRABLE?

BY E. W. PEIRCE

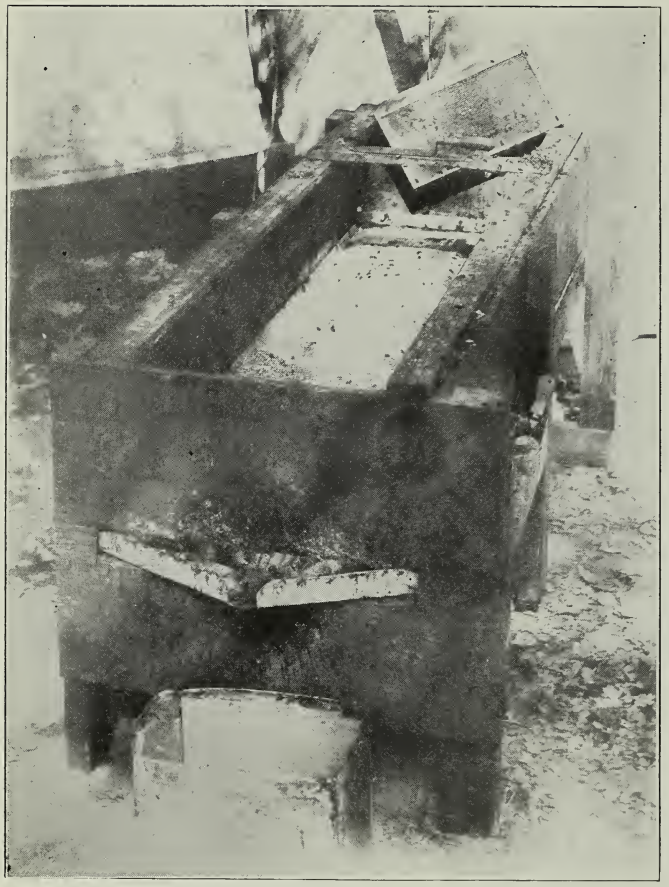
'Tis said, "When young folks talk to old folks they should know what they're about." If, therefore, in the course of this article I shall go counter to the tenets of my elders in the profession I beg that those seeming fallacies be charged to "youth" rather than to any desire to occupy an arbitrary position. A baker's dozen years of experience as a keeper of bees and producer of honey on a small scale, together with a number of years devoted to the buying and selling of honey may possibly entitle me to a corner in the councils of the wise.

In reading the compositions on the subject of selling honey appearing in the various bee journals during the last few months I have been impressed with the dominance of one specific note—"How get higher prices?" So persistent has been the harping on this one string that I am venturing to voice my sentiments here, even at the risk of striking an unpopular chord.

Let me say at the outset that I have no desire to quarrel with any of my good friends the beekeepers (and thus jeopardize my daily bread). Our interests are mutual; and if anybody is in a position to rejoice with them in prosperity and mourn with them in adversity, surely it is I. Moreover, the threefold nature of my relation to the trade should enable me to view the subject from different angles and discuss it in an unbiased way.

Any legitimate effort, either of producer or dealer, to secure good prices is commendable. But is it not true that the advocates of higher prices too often in their pleadings totally ignore certain factors that must enter into the problem?

There is one law that never has been and never can be repealed—the law of supply and demand. Combination and manipulation may for a time suspend its operation, but there is a perpetual equilibrium in the sphere of economics that necessitates its reinforcement. Why are eggs quoted at twelve



Sechrist's combined uncapping-box and melter. Three-fourths of the honey drains off before the cappings reach the hot surface, so that only about one-fourth is heated.

cents a dozen in June and forty cents in January? Simply because in June the supply balances demand; whereas in January demand outweighs supply. "Cornering the market" may modify the price to a considerable extent, but there is a limit that can not be exceeded without curtailing the demand. Were the cold-storage men to advance eggs to two dollars a dozen, even assuming that they could control the entire supply, how many of us would eat custard pies?

Let us now apply the same reasoning to the honey situation, not losing sight of the fact, however, that eggs are a staple—a *quasi* necessity—whereas honey is admittedly a luxury. Even at the exorbitant price suggested, there would be an appreciable though almost infinitely diminished demand for eggs. In the case of honey, even a small fraction of this coefficient of expansion would be in effect prohibitive.

It is true that, in many cases, the individual beekeeper can develop in his immediate neighborhood a demand for his honey at any price within reason, and he is entitled to the highest figure he can command. But we are considering the market in its wider scope. I concede that,in the larger cities, there is quite a large fancy trade that will buy luxuries almost regardless of price. Yet this is a small proportion of the purchasing population of these centers, much less of the country at large.

The amount expended by any community for various commodities is determined chiefly by the wage-scale and the price-current,other conditions being normal. Obviously, necessities must come first; and the amount, if any, in excess of what is required for these must suffice for luxuries. At best the margin is small. Our city of thirty thousand is perhaps a typical one, most of the citizens being of the wage-earning class, and the consumption of honey here is probably about the average. My observation, covering a period of years, has been that, when comb honey retails at 20 cents or less per average section, there is a staple demand; but if the price be increased to 22 cents, there follows a shrinkage altogether out of proportion to the advance. In other words, 20 cents is the "dead line" —the limit that can not be exceeded if a healthy demand is to continue. I could wish that the standard price might be higher here and everywhere. Gladly would I see both producer and dealer secure the larger profit. But, to quote one of our former presidents, "It is a condition and not a theory that confronts us;" and any attempt on the part of either the National Association or any other organization or individual to "bull" the market, to the utter disregard of these considerations, must necessarily react by cutting down the demand for honey,

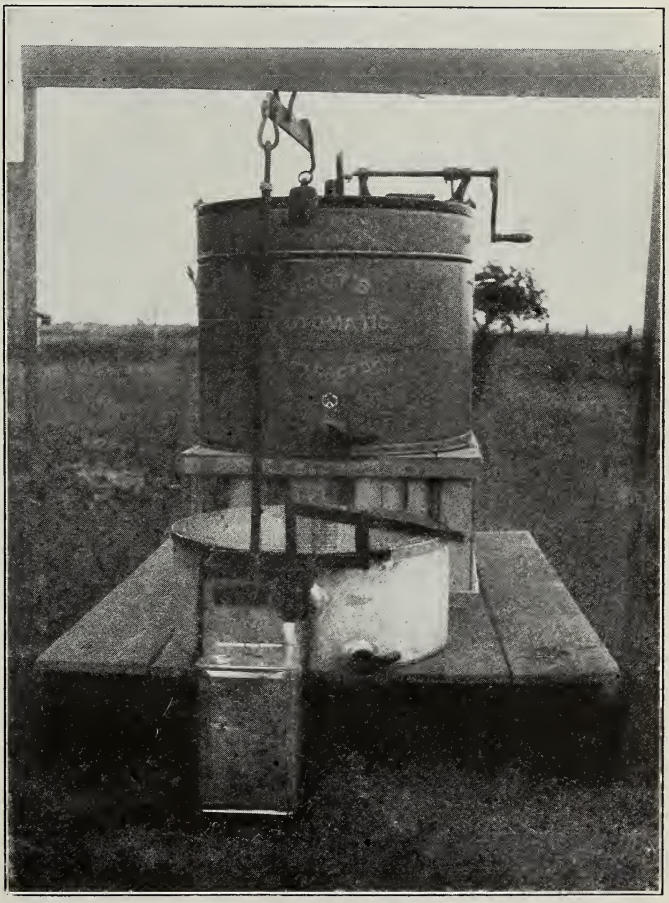
and thus frustrating at once its very purpose.

To make my position clear, allow me here to introduce the much "cussed" and discussed "Karo corn syrup." Why are such immense quantities of this syrup consumed? First, because of the able and persistent advertising of its merits; second, because, to the average taste, it is palatable; third, and chiefly, because it is cheap. It is not my purpose to advertise Karo, albeit we may as well admit that it is here to stay. Nothing is gained by shutting our eyes to the truth, nor will misrepresentation or detraction alter the facts. What is "corn syrup"? A variable mixture of glucose, or grape sugar, and other invert sugars, etc., manufactured from corn starch by the action of dilute acids. Karo and other cheap syrups consist essentially of corn syrup with a small percentage of cane-sugar syrup added to intensify the sweet. The only valid objection to pure glucose or any sugar of its class is its inferior sweetening power, it being only about half as sweet as sucrose or ordinary cane sugar. According to the best authorities it is not injurious to health; on the contrary, being (like honey) "inverted" — predigested, as it were —it is more readily assimilated than cane or beet sugar. It is the form in which sugar generally exists in fruits, etc., and the substance into which the starch of our food is converted by the digestive ferments before it can be utilized in the vital economy.

As to palatability, that is another question; and, as a Latin professor used to remark, "De gustibus non est disputandum," there is no disputing about tastes. I must confess that personally I am not averse to the use of the lighter-colored of these syrups as an occasional change from more pronounced sweets, though I freely grant that the best of them is a far call from white-clover honey. But mix them—take half honey and half *white* Karo—and see what you get. "Lickin' good!" Try it for yourself.

Now, instead of running down these syrups and attempting to bull the honey market without regard to the ratio of demand to supply, would it not be wiser to publish broadcast such a recipe as the foregoing, if by so doing the demand for honey could be, as it undoubtedly would be, materially increased? If honey is ever to have its rightful place as a staple along with bread and butter and sugar and meat, it must be popularized. This can be accomplished only by systematic advertising of its virtues, and by its production on a scale that will allow delivery to the consumer at a reasonable price.

What is needed is not higher prices regardless of any and all other considerations. The situation demands, instead, *more*

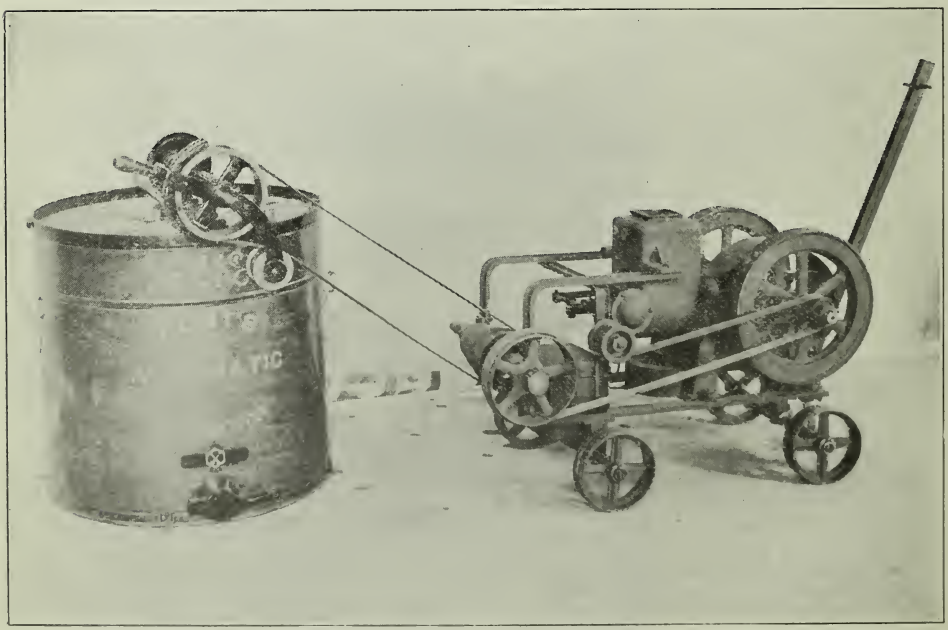


B. B. Hogaboom's combined gravity strainer and automatic device for closing the gate when the can is full.

A large lot of bulk comb honey in Mason jars being heated by the sun to retard granulation.

beekeepers, better beekeepers; more bees, better bees; and, as a natural result of improved methods and intelligent management, *more honey* and *better honey,* so cheaply produced and so widely distributed that not only will it be profitable alike to producer and dealer, but even the humble toiler can well afford to use it with his daily bread.

Zanesville, Ohio, April 11.



The New 60-speed engine made by the Gilson Manufacturing Co., Port Washington, Wisconsin. The particular feature of this engine is the jack-shaft and series of interchangeable pulleys by means of which 60 different driving speeds may be secured, so that the engine may be used to run any thing from a grindstone to an emery wheel without expensive pulleys, shafting, and belts. This should appeal to the beekeeper.

[We have no doubt that some of our subscribers will take issue with Mr. Peirce, especially as to his proposition relating to glucose or Karo. While we do not know the exact character of Karo, we do know that some authorities claim that glucose, because of the difficulty of eliminating all the acids used in its manufacture, is not altogether a wholesome food. We admit that some chemists claim that glucose, while having a very low sweetening power, is not unwholesome; but they evidently refer to an article that contains no residue of acid or neutralizing salt. A few years ago it was reported that John D. Rockefeller, reputed to be interested in the manufacture of glucose, would give one hundred thousand dollars to any one who would discover some process for eliminating absolutely the acid used in the making of it. We have never heard that the hundred thousand was taken. At all events, commercial glucose at least contains something that the makers would like to get rid of.

We have never tasted glucose or glucose preparations without having a very unpleasant after-taste, best described by the term "brassy." Some years we partook of common commercial glucose quite freely—ate it three times a day, to see if we could acquire a taste for it. Our digestion was upset for two weeks; and to this day glucose, even a slight taste of it, brings back the feeling of nausea which we shall never forget.—ED.]

A COMBINED STRAINER AND AUTOMATIC CAN-FILLER

BY B. B. HOGABOOM

For two seasons I have used my patent strainer and automatic can-filler, as shown in the photograph, and I find that the outfit is perfection itself. The strainer can is 40 inches in diameter and 16 inches deep. The circular screen for straining is supported 1¼ inches from the outside and from the bottom of the can, while the honey remains within 3½ inches from the top all the time as it runs from the bottom of the strainer through a tube up to the gate. A small pan (not shown in the photo) 12 inches in diameter, ½ inch deep, is ½ inch below the surface of the honey in the strainer can; and it stops all cappings of wax particles ½ inch below the surface of the honey, and they at once start to rise from this level instead of going down and coming in contact with the screen, as they would do if no pan were used.

This strainer may be used day after day without becoming clogged unless the honey is partly granulated. If it is granulated I have a sectional screen by the use of which the solid portions settle on the lower part, while the honey strains through the upper part of each section. The parts of this sectional screen are detachable, and may be cleaned very quickly. This is not necessary except in case of large quantities of granulation, which very seldom occurs.

The automatic filler is shown very plainly. The valve closes instantly when the desired weight is reached. This is automatic, and can not miss, as the valve is perfectly loose, with not one particle of friction until it reaches its seat, where it is firmly clasped with a spring. The rod reaching from the filler to the balance is in two sections, one going inside of the other, secured by set-screw so it can be hung at any height—preferably from 6½ to 8 ft. from the floor, which is out of the way. This device is also detachable from the strainer, fitting any size of strainer can. I usually arrange this automatic filler with an electric bell which always announces to the operator that the can is filled. There is about 3½ inches of space from the level of the honey in this can to the top while running. This extra space would hold about 10 gallons, which avoids all danger of overflowing while changing cans. By the use of this complete device there is not one moment lost during a day or week in extracting, except to remove the full can and replace the empty—no cleaning of strainer, and no overflowing of honey. The small gate at the bottom of the strainer-can is used only to draw the remaining honey after the yard has been extracted.

Elk Grove, California.

[As can be seen, this is really a gravity strainer, with a screen to strain out the larger bits of comb, etc. It would seem as though the can should be deeper, but if our correspondent finds that this depth renders the honey sufficiently clear, then a deeper can would be of no particular advantage.—ED.]

PACKING BULK COMB HONEY IN GLASS

Liquefying Candied Honey by the Sun's Rays without Melting the Comb

BY J. J. WILDER

When I began the production of bulk comb honey in a wholesale way I used large-mouth cans and pails to pack it in; but I soon found that it was not best to pack it thus, especially for the local market. On account of the low freight rate, tin is all right for shipments over three or

four hundred miles; but for shorter distances the trade prefers it packed in glass, because it thus sells far better and for a better price, so long as the article is fancy. The local trade takes to this new way of packing the honey very well where the people are familiar with honey; but when it comes to building up a trade or demand, it is slow work. So, taking all things into consideration, we have found it better to pack all the light honey in glass and the off or dark grades in cans and pails.

After trying nearly every kind of glass packages that could be used for this purpose we have adopted the regular Mason fruit-jars—quart and pint size—and we have found more demand for the latter size. Of course the honey thus packed is neatly labeled with our name, address, and guarantee.

ADVANTAGE OF MASON JARS.

Aside from the demand, there are many other advantages in this package to the honey-producers. They can buy the jars at almost any grocery, and get them at a greatly reduced price at any wholesale grocery by taking a considerable quantity of them.

Then the jars come well packed in good corrugated paper cases—12 jars to the case. The covers of the cases are only slightly pasted down, and can be easily and quickly removed. The jars are usually clean, and all that is necessary is to rinse them in clean water. When they are filled and labeled they may be set back in the same cases, the covers sealed, or a strong cord tied around it on all four sides. We usually use binder twine for this purpose, as it is cheap and strong. Most of the cases are handled by the cord instead of taking hold of the package. A good man can pack from 30 to 50 cases, ready for market, in a day. Neither time nor expense is required for making cases, and you have something far better for the purpose than you could make.

HOW TO LIQUEFY THE HONEY WHEN IT GRANULATES.

On our labels the following appears: "If this honey granulates, set the jar in warm water or in the sunshine, and it will liquefy."

This is another great advantage in using glass. Sometimes the honey will granulate while on the shelves in the stores; and the clerks know that, if they take it to the rear of the store and set it in the sunshine, it will soon be liquefied and ready to set back on the shelves, so that it is just as attractive as ever.

If desired the honey may be set out in the sunshine as it is packed, and heated up for a day or two, thereby retarding granulation. If the sun is shining very warm it is better to fasten the covers down before it is set in the sun, else it will become hot enough to melt the comb and spoil the appearance of the honey. If the sun is not shining too warm, the honey can be set in the cases, and the tops left open and set out where the sun may shine on the jars as they stand in the cases. If there is any packing to be done during cool weather, or if any should be left on hand until it granulates, the jars can be removed from the cases and set out in the direct rays of the sun, and then heated up and put in shape for the market.

The illustration shows a large shipment of bulk comb honey out in the sun between our work-shop and packing-house, where it can get the full benefit of the *heat of the sun*. In this way our entire crop of honey is heated so that our trade is troubled but little with granulation.

The apiary in the background is a portion of our home yard, and shows how all our hives are shaded during the summer. We always select a location where there is small growth and thin shade, so that we are not bothered by having to shade our hives, and we have a cool open shade to work in.

Cordele, Ga.

[As we understand it, the illustration shows packages or boxes of bulk comb honey ready for shipment, but placed in the sun for a time to warm up the honey inside. It would seem to us that not enough heat would penetrate through the sides and tops of the opaque packages to warm up the honey in the glass Mason jars so that there would be any effect one way or the other on granulation. Perhaps we do not take into account the full effect of the southern sun.

It will be remembered that Mr. H. R. Boardman and Mr. E. B. Rood have for a number of years practiced setting glass jars or honey in solar wax-extractors, where considerable heat is generated—enough so that the temperature of the honey is raised to a point where granulation is arrested. It is also believed that the sun's rays have an additional chemical effect tending toward the same end. Of course, if the jars are shut off from the sunlight, as in the illustration, there would be no chemical effect.

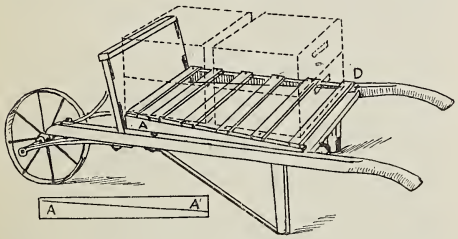
One objection to bulk comb honey coming to the North is the danger of granulation; and while it can be liquefied, many will not discriminate carefully between what is meant by *warm* and *hot* water, overdo the job, melting the combs as well as heating the honey. In the southern States, where there are no such extremes of temperature

as we have in the North, bulk comb honey would remain liquid longer and in most cases would reach the consumer before granulation set in.—Ed.]

A HOME-MADE PUSH-CAR AND TRACK FOR USE IN A LARGE APIARY

BY C. W. DAYTON

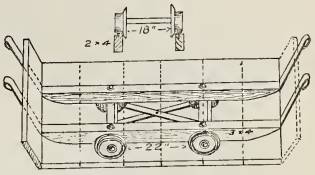
Cut No. 1 shows how I arrange a rack on the Daisy wheelbarrow so as to carry an appreciable load. My frames are 13 inches long, and the barrow will carry 4 comb-boxes, or 8 two deep; but of the standard-size frames the barrow holds 2 comb boxes



side by side, and one crosswise. The Daisy is the best barrow I have ever found for use, either in or out of the apiary. I use a wheelbarrow for wheeling honey until the honey-flow comes on in earnest. Then I use the car constructed as in Fig. 2. I made this car in 1899, and have used it six seasons. The wheels and axles are the same as are used in mining. It runs very easily, carries one or two tons when necessary, and costs $7.00 for the running gears. It requires about $50.00 worth of track, made of wood covered with strap iron, as shown.

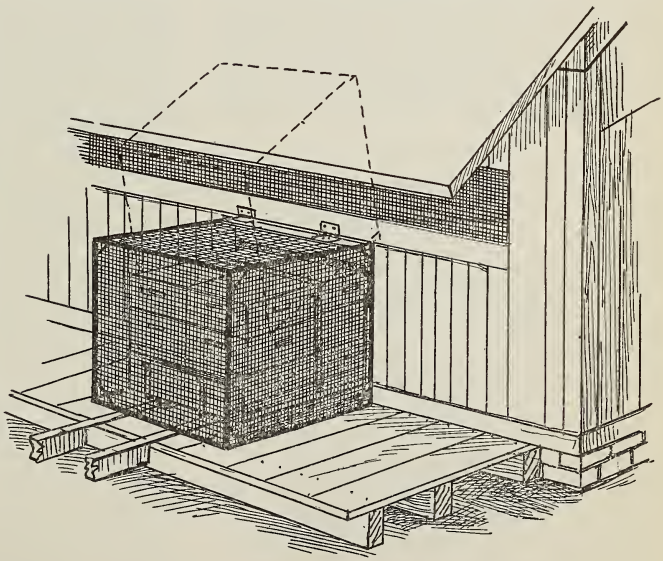
Fig. 3 shows the loaded car partly inside the extracting-room, and the rear part covered with mosquito-bar frame to exclude bees. I do not run the whole car inside the building.

When the honey-flow is at its height I do not remove honey earlier than about 10 o'clock because the comb-builders are drowsy, and hard to brush from the combs; and I do not remove honey later than 3 o'clock, because the old bees are usually returning from the fields and will fight. But enough can be removed between these hours to keep us busy the rest of the day and the next morning. The car track is made in 20-foot lengths, and can be put down in an hour or two. When not in use it is piled up and covered with corrugated-iron sheets.



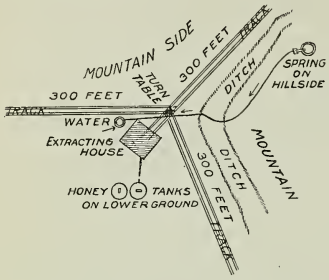
If the apiarist intends to use a car, the ground should be level; and there should be as few directions to travel as possible. My track is arranged in three directions as indicated in sketch 4. When I came here and adopted this location, every foot of the ground was so steep that a hive would roll down the mountain. These tracks are level; and the width of the embankment, including both sides of the tracks, is not less than 12 feet, and affords space for 600 colonies if necessary; but 350 are the most I have kept here. It was made with pick and shovel, which afford the best kind of exercise I know of.

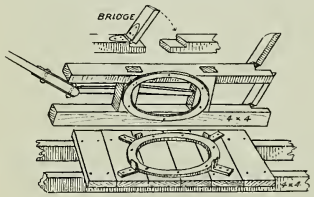
Fig. 5 represents the turn-table, which cost about $5.00 besides the labor. Fig. 6



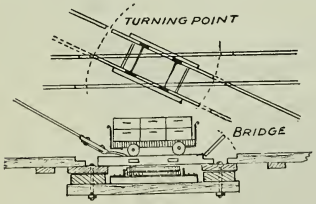
shows that the space in the track which the turn-table occupies is too short for the turn-table to turn. For this reason I use the bridge as shown, and give the table plenty of room. My track is made of 2x4 strips of wood, with straps of iron ¼x1¼ inches, and

it will carry from two to three tons. Much lighter material could be used, so as to carry 500 to 600 pounds, and cost about $20 for enough track for 200 or 300 colonies. I would not do without the car, as it enables me to do about one-third or a half more work, and makes work a great deal easier. It is especially advantageous in the height of the honey-flow when every thing goes on a rush and everybody is tired.





The apiary faces the east, so that the bees begin to work early; and the mountains for miles slope toward the apiary, and are covered with some of the best honey-yielding flora. It is also well protected from cold winds. When the hives are more than 200 feet from the extracting-room it is a little difficult to see the swarms, so I keep queen-guards or traps on the colonies which are furthest away. The canyon is very short. It seldom has any running water in it, although I arranged the ditch for it to run in, in case there should be a cloudburst directly overhead.



Chatsworth, Cal.

DEATH OF ISAAC CARTER.

My father, Isaac N. Carter, died May 7, 1912. He had a nice apiary, and was a great reader of GLEANINGS.

Recknor, La., May 18. CHARLEY CARTER.

DISPOSING OF A HONEY CROP IN A LARGE CITY

BY ALBION PLATZ

To sell honey in a city is an easy matter: first, because of an almost limitless market and demand; and, secondly, because your customers, knowing that you keep bees, have unbounded confidence in the purity of your honey. Bee-hives, to those born and raised in a city, always excite a great amount of curiosity and interest; and to show a few frames of bees and the queen, and, lastly, a frame of newly capped honey to a party of spectators, always invites many sales.

The honey which I secured from my little seven-colony apiary located on Mt. Auburn, a thickly settled suburb about 1½ miles from the heart of the city, is all sold locally and within a radius of four miles. I run exclusively for extracted honey, and have a fixed price from which I never deviate; viz., 20 cts. per pound. I am employed in our local postoffice, and naturally come in contact with a great many people, especially my fellow-clerks, and these are my best customers. Naturally, they tell others about the honey, which they are sure is pure, and thus I have more customers than I can supply. I put up my honey in pint and quart Mason jars, and for the former I receive 35 cts., and the latter 65, refunding 5 cts. for every jar returned.

In marketing honey in this manner, there is no expense for containers, labels, fancy bottles, etc., for it is a well-known fact that a gaudy package often envelopes a very inferior article. No guarantee of purity is ever used or demanded. The buyers see the bees in my garden, and it is a foregone conclusion that the honey is pure. This year I intend to produce some comb honey, as the demand for it is steadily on the increase, and I have many demands for it already, being offered 25 cts. per section. However, I can make a larger profit on extracted at 20 cts., and would rather stick to the latter, as it is easier to produce, and I can secure almost twice as much per colony. I would advise the small beekeeper to run for both comb and extracted, if he has the equipment, and in this way all purchasers are satisfied.

I advise all who have a taste for apiculture, and who have a little spare space in their back yards, even though they live in congested suburbs, to keep a few colonies of bees. There is no better recreation for the city man, and the returns in honey and money always justify the little time and energy spent on the pets.

Cincinnati, May 17.

Heads of Grain from Different Fields

Bees a Nuisance in Strawberry-picking Time

In conversation with a young man who left his present position to go back to gardening and small-fruit raising, I spoke of beekeeping. He said, "Don't talk bees to me." I asked him why. He said that in eastern Canada where he once worked, a large producer of strawberries, blackberries, and raspberries was located near an orchard in which were about 200 colonies of bees. He said that they did not bother any one until picking time, when the boxes were filled and placed in the shelter of the bushes to be collected. When the collector came along he found the berries covered with bees. Of course, the person collecting the boxes was in danger of being badly stung. Now, what I want to know is, while we have the word of many fruit-raisers and beekeepers that bees will not injure plums, grapes, apples, or peaches, all of which are hard-skinned fruits, have you or any of the contributors to GLEANINGS had any experience with bees and the soft-skinned fruits such as the three berries referred to?

HARVEY G. BRANT.

St. Paul, Minn., April 1.

[It is possible and even probable that, during a dearth of honey, bees might attack overripe raspberries, blackberries, or strawberries, especially if the fruit is bruised in handling. In a case like the one referred to, the beekeeper should make some arrangement with the fruit-grower to induce him to cover all fruit with mosquito-netting as fast as picked. It would take but a moment of time to lift up a cover and place the freshly picked berries under it. It is useless for beekeepers to deny that bees will sometimes attack overripe or broken fruit, especially fruit like strawberries or raspberries. But as a general thing, when strawberries, at least, are in bearing, clover is beginning to yield. When blackberries begin to yield, there is apt to be a dearth of nectar. It is at such times that the beekeeper and the fruit-grower should get together in a friendly way to avert the trouble. It can always be arranged amicably when proper precautions are taken in advance.

In this connection it is proper to state that bees will not attack sound fruit such as peaches, plums, cherries, etc.; but whenever there is a dearth of honey we always advise having any fruit, as soon as picked, put inside of a building or under a netting. Even if there are no bees around, the fruit should be screened to keep off the typhoid fly, commonly called the domestic or house fly, as that insect can do a thousand times more damage to the human race at large than a few bees on broken fruit.—ED.]

To Avoid Uncapped Cells in Comb Honey

I have been keeping bees for three seasons, and have now six colonies. I should like to go into it on a larger scale if I thought I could make it pay. I am producing comb honey, and the larger part of the sections are not completely sealed over. In some sections, perhaps only one or two cells are not sealed; still, it is enough to drip in handling. I should like to inquire what is the best method of disposing of these sections. I had thought of cutting the honey from the section box and straining and bottling it. Kindly tell me the proper way to do this. Should the honey be heated, or is it bottled cold? I am using eight-frame hives, and mostly plain sections with fences, although I have used beeway sections with the slatted separators, but this does not seem to make any difference in getting the cells all sealed. I use a starter of about one inch in each section.

Ware, Mass. CHAS. H. WALKER.

[It is almost impossible to get every cell sealed in a section of honey, taking the super as a whole. You will find some, it is true, that are perfectly sealed; but these generally grade as fancy. The No. 1 grade may have unsealed cells next to the wood. There is bound to be a little drip from these cells, but still not so very much either, for the honey becomes very thick in such cells after standing a short time, and is, therefore, less likely to drip.

If you have a very large proportion of unfinished sections, consisting of those only partly sealed, say two-thirds, it may be that you give too many sections at once. This is sometimes the case when the new super is added next to the brood-chamber, the one nearly finished being placed on top. The trouble is, that the flow may end suddenly, leaving these upper sections filled but not capped.

There is a plan which tends to do away with unfinished sections, but which requires much more work; that is, to shift the sections from the sides of the supers to the center, removing those in the center just the minute they are finished. Such honey is always whiter and nicer, being freer from travel-stain, and there is much less chance for a lot of unfinished sections at the end of the year.—ED.]

An old Clipped Queen Found Sealed up in a Cell

I discovered a peculiar "stunt" yesterday when looking over a strong Italian colony in a Danzenbaker hive. I discovered twenty capped queen-cells; and, though I looked the frames over several times for the queen, I was unable to find her. Upon cutting out the queen-cells to prevent swarming I found the *old clipped queen* nicely sealed up in one of the cells. She was in head first. The cell was a very blunt one, away from the other cells, and the bees paid no attention to it. I examined it very closely before cutting it, as it looked rather peculiar, and not one bee was on that cell while I was watching it, although there were hundreds on the comb. The queen was all right about a week ago, and, so far as I know, she was laying at that time. When I pulled the dead queen out she was covered all over with royal jelly.

I wish to mention here that I am a believer in plenty of ventilation to prevent swarming, and these cells are the first I have found in my twelve colonies since 1909. See page 320, May 15, 1910. Some of my colonies have four comb-supers on, all being filled with honey, and there is no sign of a swarm except in this one colony, and this is something unusual.

WALTER T. ACKERMAN.

Huntington, W. Va., May 22.

[A young virgin had probably come from this cell while the old queen was still in the hive, the swarm having been delayed by bad weather, possibly. This old queen, attracted by the royal jelly, very likely went into the cell, and the little hinged door in some way was swung back into place, so that the bees did not suspect any thing wrong, but just sealed it down. Young virgins have been found in this predicament, but we do not remember having seen an account before of an old queen being thus trapped.—ED.]

Veiling Horses when Working Among the Bees

That plan of Louis Scholl's, page 682, of removing loaded wagons from near apiaries or robbers is very good, but a slow way. I used a rope for two seasons ten or twelve years ago, but discarded it for the more simple plan of veiling the horses by slitting an ordinary grass-sack on one edge from the top to within four inches of the bottom. I slip the sack over the horses' heads and tie under the throat with string placed there for that purpose. Then I put the breast-yoke and doubletrees to the team, slip the yokepin on, drop the pin into the doubletrees, and I am off in 30 seconds. As a rule the bees are not bad if horses do not shake their heads. These sack veils eliminate that.

A CAPPING-MELTER THAT FURNISHES STEAM FOR THE KNIFE.

Severin's honey and wax separator, Dec. 15, p. 756, looks pretty good after the whole is once melted, but looks as though it would be slow work melting, besides using too much fuel. It is so open at the top that one would have to have two stoves going to heat this and the knife.

I have one of my own invention that I have used for several seasons that requires only one gas-stove to keep the whole outfit hot. My melting-tanks are double-walled. The outside tank is 16x24, and 18 inches deep, while the inside tank is 14x22x16 inches. At 2½ inches from the top of the outside tank is drawn in even with the top of the inside tank; then both are soldered together, air or steam tight, so that no steam escapes except through the steam-knife, which is attached by soldering an ordinary oil-can spout to the screw top or the place where I put the water in. In this way the honey

and wax are melted and the knife is heated, all with a one-burner gas-stove.

The stuff is melted, then gravity fed into a separator similar to Mr. Severin's. This kind of machine never clogs, as there is a regular honey faucet passing through the outside tank and connecting with the inside one, through which every thing passes as fast as melted. The heat is not only conserved, but the heating capacity is much greater, as the inside tank is hot on the sides as well as the bottom. The inside tank has a partition six inches from the end which has the faucet. In this partition there is a four-inch slip gate to raise and lower, similar to that of the old-fashioned syrup-vats, easy to slip and unclog if necessary.

Of all uncapping devices, the steam-knife, in my opinion, leads. When some one says that he has a machine for uncapping honey, and I find that the machine does not save the wax, then I fail to get interested. A machine that does not save the wax has no place in my apiaries. Show me the man who has 500 colonies who will give me the wax for extracting his honey, and we will make a deal at once. With the steam-knife one gets all of the wax besides leaving the comb in fine shape. I can take my steam-knife and shave cells down level when there is neither honey nor cappings on them, opening the cells without destroying the cell walls, and can take off a sheet of wax merely hanging together by the cell walls, resembling a queen-excluder.

Mr. Crane, page 680, Nov. 15, says that stirring honey undoubtedly makes it candy more quickly. My opinion is the same, therefore I do not take well to the honey-pump, much discussed of late. It's my opinion that, the less one handles white nectar, the better the quality and flavor. For example, take two nice white combs of honey, extract one in the extractor, and just slash the other with a knife. Let the honey drain out, then taste the samples.

Pasadena, Cal. J. F. CROWDER.

Carbolized Cloths an Aid in Taking Honey off Rapidly

I use crude carbolic acid, sprinkling it on 4 or 5 cloths, and put them on as many hives. As soon as one is taken off it is put on another so as to have them all covered, and to give the bees time to go down. Very little bruising results, and the honey can be taken off faster than by any other method that I know of.

QUEEN-EXCLUDERS WITH THE SLOTS RUNNING CROSSWISE.

There is much talk about queen-excluders. Some are for and others against them. I am for them, and would not produce extracted honey without them, any more than I would run a dairy without a cream-separator. When the bees get strong I place the brood over the excluder and give the queen below some empty combs to lay in that keep her satisfied, and there is no swarming to bother with. My excluders are all zinc. They are the full size of the hive, outside dimensions, and the holes are made crosswise, thus giving the bees a chance to get through anywhere. There is no danger of breaking the excluders as with the wood slatted ones that hold together only a few years.

When are we going to have that wired foundation? It seems to me that is the only thing needed now. If we could get wired foundation up and down in the frames, and then put wires in ourselves lengthwise, we would get some perfect combs.

Brush, Colo. DANIEL DANIELSON.

If the Middleman is Cut Out, the Cost of Selling is No Lower

The middleman is not in the way. He really is necessary. Without him there would be no market prices. If there were no middleman it would affect the farmer more than the honey-producer. The farmer's time is all taken up. He has no time for other business; and if it were not for the middleman it would be necessary for him to sell the produce that he raises on the farm, and he would be obliged to deliver it from house to house. If he has some beef to sell he must first dress it; then sell it by the pound from his wagon. If it is in the summer he must have ice, etc. Suppose it takes him two days a week to sell and deliver his produce. He must then hire a man to take his place on the farm, or to sell and deliver his goods; but he can not hire a man for two days a week. He must be engaged by the month or year, and must be well paid in order to keep him.

There is no market price. Every producer sets his own price, which must more than cover the cost of the hired help. As a result the consumer pays as much or more for his eatables than he does now with the middleman. The hired help is the middleman in the case mentioned. Every farmer must do the same thing, and some of them can sell more cheaply than others. The result is easy to see.

Suppose one is several hundred miles from a large city. The home town will soon be supplied. Then produce must be shipped to the city, and there must be a man there to deliver it to the consumer. There is always a middleman for the large producer. The small producer can produce and sell his own crop of honey, etc., with profit; but there may be more profit for him if he puts in all of his time as a producer and sells at wholesale prices.

Any article that does not spoil, such as honey, can be sold by advertising in newspapers and magazines; but the newspapers and magazines are really middlemen, as they are between the producer and the consumer, and they must be paid.

A mail-order trade may be all right, but it also takes time and money to get the trade. No doubt it would take twice as much time and money to get the trade, with every producer selling, by advertising in the papers, and through the mails, etc. Parcels post would be all right, but in time the mail-order houses would get all the trade, and then they would raise their prices.

The mail-carrier would have to have a team of horses and a dray wagon to deliver the goods, and double the pay that he gets now; and then he could not make as long a trip as she does now. Parcels post may not be as cheap as it seems.

The need of a class of distributors must be recognized; but we must demand it, and a condition will come when these distributors will be more closely associated with us as producers, for co-operation will extend the terminal markets.

Greenville, Wis. EDWARD HASTINGS.

Selling Honey by "Talking"

I believe heartily in the value of advertising the food properties of honey. I began the production of honey four years ago by buying 53 colonies of bees. Up to that time I had never, to my knowledge, been closer to a yard of bees than a city block. I now have 180 colonies. In 1910 from 100 colonies I produced 11,000 lbs. of honey—extracted exclusively. This I disposed of in my home market, a city of 18,000, at 15 cents per pound net. Up to the time I introduced extracted honey here, comb honey was the only kind ever seen; but now the demand for my goods is greater than I can supply. My honey retails here at present at 60 cts. per quart jar. To create this demand I have had to keep myself and my bees before the public by any means that I could command. I have displayed my extractor at our local fair, lectured on bee life at churches, and talked honey at every opportunity.

In order to interest Canton College I donated them 120 lbs. of honey to use in their "Domestic Science" course, and it occurs to me that the honey-producers in the other parts of the country can find this a sure means of getting the food value of honey taught, not only to the students but in the homes to which they will go between school terms. It will be necessary to teach the teachers themselves, as I find that this subject is one upon which they are woefully ignorant; and it seems to me that it's up to the honeyman to show them the light.

Ogdensburg, N. Y., Dec. 20. W. T. DAVIS.

Carbolic Cloths do Not Kill Brood

In Stray Straws for April 1 Miss M. Candler is reported as having used carbolic cloth largely, and it did its work well, but killed brood. Although I have used these cloths under all circumstances I never have known them to do that. I am well acquainted with some of the best beemen in Carmarthen, South Wales, and I've never heard a word concerning the killing of brood, nor have I ever seen a hive where it failed to do its work when used in the right manner. I myself have great faith in it, and shall always use it, when necessary, in preference to the smoker.

R. V. HEYHOE.

Toronto, Ont., Canada, April 20.

Our Homes

A. I. ROOT

Even Christ pleased not himself.—ROMANS 15: 3. Even the Son of man came not to be ministered unto, but to minister, and to give his life a ransom for many.—MARK 10:45.

The character of our Lord Jesus Christ stands out clear and sharp as differing from that of any merely human being who ever lived. As described in our text, "he pleased not himself." In fact, the more we study the account of the life he spent here on earth, the more we are impressed with the fact that he never used his wondrous power in any way for his own personal benefit. He never thought of self. Even when wearied by days of busy toil he never seemed to think of either rest or refreshment. The accounts we have of his taking food, or most of them, seem to be incidents where he taught some lessons by the partaking of food. He once convinced his followers, after his resurrection, that he was still flesh and blood by eating with them. When thirsty after a long travel, and he met the Samaritan woman at the well, he apparently forgot his thirst in leading her up and out of her wretched condition so that *she* might partake of that "living water;" and when his disciples, after they had brought food and urged him to partake, he replied, "I have meat to eat that ye know not of."

This whole matter was brought vividly to my mind by an address delivered by the Rev. Joseph Clark, in Columbus, at the Congregational State conference a few days ago. In his excellent and soul-stirring address he said something like this:

"My little girl came to me a few days ago and propounded the question, 'Papa, can we be happy *always?*'"

He said he studied over the matter a while before he answered a question of so much moment. After a little reflection he replied:

"Yes, my daughter, we *can* be happy always."

But immediately she propounded a question of still deeper and of more vital moment. It was this:

"Papa, *I* am not always happy. What is the trouble?"

Before answering her he meditated again —perhaps more deeply than he did before; but he finally replied:

"My daughter, if we are always busy in trying to make somebody *else* happy, *we* shall be happy; and it is the only way to live and get *real* happiness."

Now, my good friends, you who read these Home papers, let me put the question to you—are *you* always happy? Suppose I should ask all of my readers who are *always* happy to raise their right hand. How many hands would I see? Suppose I should ask again, "How many of you are happy a part of the time?" I hope every hand will go up. But if I should ask, "Is there one among you all who is *never* happy?" may God forbid that there should be even *one* such person! When a poor child of humanity says he is *never* happy, he is coming pretty close to the terrible suicide mania that is now cursing our world of people more or less. Perhaps there are some among you who are *seldom* happy. My good friend, the trouble is *surely,* as Dr. Clark put it, because you have been seeking happiness from a selfish point of view. You have got it into your head that the world owes you "happiness," or, say, that it owes you a *living,* whereas the world really owes you nothing; but *you* owe to the world a big lot. "Not to be ministered unto, but to minister."

Some of you may turn around and ask the question, "Mr. Root, are *you* always happy?" I answer frankly, "No, I am not always happy; but when doing my duty, working honestly and unselfishly for the great sea of humanity around me, there is an undercurrent of happiness that is seldom or never very *much* interrupted or disturbed."

I can always thank God for having given me a human life to live; and whatever trials or temptations or disappointments and perplexities meet me, I can, *thank God,* say honestly and devoutly, "I *know* that my Redeemer liveth."

I have told you in former Home papers how that little prayer, "Lord, help," often lifts me up out of darkness and into the light; and when a contrary and stubborn spirit seems to get possession of me, I involuntarily breathe that celebrated prayer of David, after he had sinned and fallen—"Create in me a clean heart, O God, and renew a right spirit within me."

Now, we have been discussing so far, at least mostly, our spiritual experiences. I find that, as I grow older, and, in fact, all through my life, to be happy and enjoy life I must take care of my physical body. Of late I can not stand office work or reading papers and magazines much more than an hour at a time. I have, hanging up right handy, near the back door a very light and bright shining hoe. Whenever I am done

using it I rub off the clean steel blade so that it fairly shines. Well, two or three times a day I take this hoe in hand and work in the garden until the perspiration starts, or until I feel a little weary. Then I stop and greatly enjoy a good drink of boiled rain water. I do not care to have it ice-cold; but I try to keep my enameled pail of drinking water in the coolest place about the house, especially in hot weather.

Some of you may suggest that getting happiness by using that bright hoe is working for self, and not quite in line with what Dr. Clark said to his little girl. But, my good friend, there are many ways of using a "bright sharp hoe," where it is not all self. The children and some of the grandchildren have gardens around our home; and I frequently use this particular hoe to teach them lessons in gardening. A few days ago I said to my youngest daughter, "Carrie, your tomatoes need hoeing. I will hoe just one row for you for a pattern."

She thanked me; but another daughter, "Blue Eyes," who was near by, looked up with a roguish twinkle in her eyes and said, "Father, I wish you would hoe one row of *our* tomatoes too, just for a pattern."

I assured her it would give me great pleasure to do so. Now, Carrie's tomatoes were in a little bed of three rows, with four or five in a row; but when I started to do some more "sample work" I found Mrs. Boyden's tomatoes were all planted in one long row clear across the garden. You see they "had a joke on father."

There is another way in which that bright hoe comes in play in the line of our texts. By its use I raise considerably more garden stuff than Mrs. Root and I alone can take care of; and one of the rare pleasures of having a garden is where you have a little surplus (or perhaps if you have not) of carrying samples around to your neighbors, and surprising them in two ways—first, by the excellence of your skill as a gardener; and, second, your disposition to *divide* with your neighbors the good things that God in his mercy has given you as the reward of your toil.

I have been studying over this matter of being happy always, for same days past, and I have been trying to think of some one person who seemed to be happy always. The one who came nearest to it was my good mother—bless her memory! From early childhood clear up to old age she seemed always bright and cheerful. The one text I have quoted, "I know that my Redeemer liveth," was one she quoted often. Whatever happened to make the rest of the family feel sad and sorrowful, she always took a bright view of the case. Her whole life reminds me of a beautiful thought expressed recently in the *Sunday School Times*.

SINGING ALWAYS.

Nothing can quench the song of a heart that really believes in the love and power of God, and that has accepted this in Christ forever. If the song is quenched, it is because we have, for the time, ceased to believe in God's love or power; but that we need never do. As Victor Hugo wrote:

> Be like the bird, that, halting in her flight
> A while on bough too slight,
> Feels it give way beneath her—
> And yet sings—
> Knowing that she hath wings!

Our wings are the love and the power of God in Christ who is our life. Nothing can overbear these wings; nothing can deprive us of the joy of the consciousness of their presence except our own refusal to let Christ share himself fully with us. And even that refusal Christ can overcome, if we honestly ask him to do so. His joy may be our joy, always. Everything else may give way beneath us; but Christ, never. Therefore "I will sing with the spirit, and I will sing with the understanding also," and all the powers of earth and hell shall not quench my song.

The reason why the bird mentioned in that beautiful stanza kept on singing, even though the slender bough gave way when she alighted on it, is because she "had wings"—wings that never failed, and which would always buoy her up. My mother's life always seemed to have the comforting and sustaining assurance that there were wings out of sight that would always prove a "present help in time of trouble." My good father, however, who, although a professing Christian, and who finally died trusting in the Bible promises, had his ups and downs. He used to get what we called in olden times the "blues;" but mother's bright and cheerful face was *usually* a never failing remedy. I have often thought that it was providential that they two were brought together. At one time in his life, during a quarrel over a division fence, he talked about withdrawing from the church, and said to our good pastor that he would have withdrawn long before had it not been for his "companion." The pastor replied something like this:

"Brother Root, that devoted 'companion' of yours, if you will continue to be guided by her, will ultimately bring you into the kingdom of heaven."

Now, my friends, let me exhort you, in closing, especially if you want to thank God and enjoy every moment of your life, to be always *busy*. Have a bright clean hoe like mine; and whenever you feel that streak of unhappiness coming on, get busy with the hoe; and when you get busy, remember what good Dr. Clark told his little girl. Be contriving and planning and working, or experimenting in something to make *others* happy; and before you know it or realize it you will be happy yourself, and singing like the bird on the swinging bough.

There is a beautiful promise in the 91st Psalm which I think will make an excellent ending for my talk on happiness.

There shall no evil befall thee, neither shall any plague come nigh thy dwelling. For he shall give his angels charge over thee, to keep thee in all thy ways. They shall bear thee up in their hands, lest thou dash they foot against a stone.

JUDGE LINDSEY, OF THE JUVENILE COURT OF DENVER, AND THE WAY RIGHTEOUSNESS IS PROSPERING OVER INIQUITY.

Mr. E. R. Root:—Perhaps you have seen it in the papers; but I want to tell you that the corporations have been thrown out of politics in the election in Denver. This is the culmination of the fight begun several years ago by Judge Lindsey, the story of which is told in "The Beast and the Jungle." The victory was so sweeping that every office was captured by the Citizens' party headed by former Assessor Henry J. Arnold, who is now Mayor, and Judge Lindsey, who is still Judge of the Juvenile Court. Judge Lindsey ran over two thousand votes ahead of the Citizens' ticket, and the Citizens' ticket polled about 41,000 votes against about 30,000 for the Republican and Democratic tickets combined.

You remember that I told you about the assessor being thrown out of office by force at midnight? Well, he is now mayor. The reason that he was thrown out of office by force was because he would not extend an illlegal tax levy upon the assessment rolls.

Another thing was the fact that the former machine administration would not call a special election to vote on commission form of government, petitioned by over twenty thousand voters. This is provided for in our initiative law, but they disregarded it, and are now supplanted by officers, every one of whom is pledged to commission government.

Why not ask the readers of GLEANINGS to express themselves on their choice for president, also on government ownership of telegraphs, express companies, also any other public questions of national concern?

I am enclosing a letter, the fourth during the past month from different GLEANINGS readers who have invested their money with this man Degge, who is a promoter of a score or more of enterprises, not one as yet a dividend-payer. He has had fraud orders issued against him several times, I believe. Our local banker referred to his schemes as thirty-cent propositions. What can GLEANINGS do to get these people to write to me *before* they invest, and not after?

Boulder, Colo., June 2. WESLEY FOSTER.

May God be praised for the good work that is going on in Colorado. And, by the way, it may save somebody's honest earnings by presenting also the letter you mention.

Mr. Wesley Foster:—Would you kindly give me some information regarding the enterprises in which W. W. Degge is interested, in and around Boulder? Do you consider him thoroughly reliable? I am a stockholder in his company, and should like to know your opinion of his chance of making good. I am an old beekeeper, and have invested my earnings with him, and should like to know through a fellow beekeeper his standing in the community in which he lives. I have been reading your letters in GLEANINGS, and felt that I could rely on any information you could give me regarding M. Degge.

Appalachicola, Fla., May 20. W. P. DUNLAP.

Just think of it, friends. A hard-working beekeeper, and one also, as we take it, well along in years, has wasted his hard earnings by listening to some wild schemer and promoter. Every little while we hear of somebody who has toiled hard for years with poultry, bees, or market-gardening, and then is duped out of it all by some schemer. Is it because so many are crazed to get a *bigger interest* than they can get at their bank, or, say, of their near neighbors, where it would be perfectly safe? Once more, do not think of investing money with *anybody* who talks to you about "dividing *his* profits," "profit-sharing," etc. And, above all, write to somebody you *know* and can *trust* before you think of "investing" *any thing, anywhere.*

ST. CLOUD, FLORIDA, THE HOME OF THE OLD SOLDIERS, ETC.

Mr. A. I. Root's attack on Florida, and St. Cloud in particular, is unwarranted and not sustained by facts. I visited St. Cloud recently, and met and talked with a score of citizens picked at random on the streets, and I found them all happy and contented. I noticed that not many of them were trying to cultivate the soil, but they were getting fullest enjoyment out of life. St. Cloud's population, as you state, is composed of old soldiers. My father is an old soldier. He enlisted in the 144th Ohio. I brought him to this State three years ago. I located him at St. Petersburg because there were quite a number of G. A. R. men there. If I had known about St. Cloud at that time, or had investigated any of the other soldier colonies in the State, I would have located him among his old comrades. My father is too old and feeble to work. I suppose that 80 per cent of the soldiers at St. Cloud are too old to get out in the sun and plow and dig and harvest. I did not expect my father to work; but I did want him to enjoy the declining years of his life down here in this sun-kissed country where he could get out his fishing-rod and spend hours on the shores of the bay; to sit on the threshold of his home, and, as the last lingering rays of the sun tinted the skies into glorious hues, smoke and ruminate, and retire with the peace that on the morrow it would be another day without care.

And at St. Cloud you will find other fathers and other mothers, bent with age, and with worry of other days, crippled with rheumatic pains, some palsied, some pitifully crippled, who are thanking God that they are down in Florida, away from the extreme cold and the extreme heat, where a generous government's bounty is sufficient for their small needs. I know what I am talking about. I know of a mother who spent eight months of each year inside of a superheated home, and of a father who suffered hemorrhages, and was thrice given up to die. These two people were brought from Ohio to Florida, and that mother to-day spends every day of the 365 out of doors, feeding and tending to her flock of chickens. She in three years has become twenty years younger; and that father is taking on flesh, and now laughs at the doctors, when before he was in fear of them. Is not that worth more than money? Is money every thing? Can you not talk Florida without measuring it in dollars and cents?

Suppose your brother-in-law had a brother who bought a piece of property, as you say, for $100, and was offered $400 and refused it, and is now sorry he did not sell because he can not get an offer of $100 for it. Does that signify any thing except that he was grasping and greedy? He wanted more than $400 for the $100 lot—may be $600 or $1000. He took a gambler's chances; and because he did not win out he is a welcher. He is kicking that the game was not played fair.

Those who bought a $100 lot, and improved it, and caused vines to grow about it, and oleanders and hybiscus flaunting their colors in front of it, and fruit trees in the rear yard, under which a flock of chickens disport, would not sell for $1000 or may be $2000, because it is home, and in that home there are health and contentment, and every morning begins a fresh day.

I am not going to answer your general attack on Florida nor that on St. Cloud. You can see a malignant spirit in all of it. I am simply writing to you to show you another view-point of the old-soldier life in Florida, and I trust you will give this article the same prominence you did the unwarranted attack.

As I write a man brings me a photograph of a

mound of watermelons on his place. This man was a traveling salesman out of Cincinnati. He came here seven months ago and bought ten acres of second-class pine land. He grubbed it and cleared it. He told me that he had sold $1300 worth of melons off the tract. has two more carloads to ship, and has set out a ten-acre grapefruit grove. He said he made more money, and had more fun in the six months' residence in Florida, than a year's hard work "on the road." And this is land which you are abusing. This man mixed some Ohio brains with the soil, and that will grow any thing in Florida except *Presidents!*

Tampa, Fla., June 6. W. B. POWELL.

My good friend, we submit your letter to our readers as you request, and *I* would submit the matter to them as to whether you or I show a "malignant spirit," as you put it. If you have been reading GLEANINGS right along I think you must agree that I have been giving both sides of the matter pretty fairly. What you say about old people getting a longer lease of life, comfort, happiness, etc., I believe is generally true over nearly all of Florida; and may God be praised that we have at least one State in the Union where we are comparatively free from frost and snow. But at the same time you have not explained to our readers how the St. Cloud syndicate justify themselves for paying 80 cents or $1.00 an acre for land, and then selling it to the old soldiers for $20.00 or $30.00 or *more* an acre.

Perhaps I might suggest to our readers that, as secretary of the Board of Trade of the beautiful city of Tampa, your opinion and ideas may be somewhat biased. I am glad to see people stand up for their own State, town, and county—yes, and for their own neighborhood; and I am well aware that large numbers of my Florida friends are pained and sometimes vexed at me when I mention such trifling things as redbugs, long dry spells, damaging frosts, etc. Well, I am trying hard to give our readers, now scattered in almost all nations of the earth, the *real truth* about every spot on the globe.

ST. CLOUD, FLORIDA, AND SOMETHING ABOUT IT AS A HOME FOR BEEKEEPERS.

The following, clipped from the St. Cloud *Tribune*, explains itself:

G. A. Bleech came here two years ago in January from Hillsdale County, Michigan, where he was engaged in the bee business. His health then being poor, he decided to try Florida to see what the climate would do for him. When he first came he brought with him three high-grade queen bees, and from them has 12 colonies. They are doing well, and he expects to fill his hundred hives without trouble. He thinks this an ideal country for honey-making. He has experimented enough to satisfy himself that he can do better than in Michigan, with flowers every month; and with orange, peach, and magnolia blossoms in season he says as fine honey can be produced here as anywhere in the country. It requires care and watchfulness and work, he says; but that is true of any industry if a man expects to succeed. Mr. Bleech says his health is all he could desire, and he's here to make this country his home. He is incensed at A. I. Root, of GLEANINGS IN BEE CULTURE, who seems to take pleasure in saying ill-natured things about St. Cloud, writing to his publication at Medina, O., from his winter home at Bradentown, Fla. Mr. Bleech asked the *Tribune* to reply to an article in the May issue of GLEANINGS, but life is too short. This is not Mr. Root's first offense; but St. Cloud is growing, and will keep on growing, in spite of Mr. Root and other grumblers and soreheads. Mr. Root likes Bradentown, but doesn-t like St. Cloud. Mr. Bleech doesn't like Bradentown, but likes St. Cloud. And there you are. We are glad Mr. Root likes Bradentown, if he does; but a man who is everlastingly trying to control the affairs of the universe is a pretty hard man to be suited anywhere.

As I have remarked before, our good people in Florida, as well as in other localities, do not like to have any thing said (especially in print), against their own town and locality. I *do* like St. Cloud; but I do *not* like the idea of charging old soldiers thirty or forty dollars an acre, or ever so much more, for land that cost the promoters only eighty cents or a dollar per acre. Our good friend Bleech has been only a short time in St. Cloud, as I take it; and I think he will soon discover that neither in St. Cloud nor in any other place in Florida, are there flowers enough to produce honey, to amount to any thing, *"every month in the year."* During the past season my neighbor Rood, with several hundred colonies, has secured so little honey that he is just now wanting to *purchase* some in order to supply the demands of his regular customers. Once in a while we have a season when Florida gives wonderful crops of honey; but, like almost all other localities, so far as I can learn there are also seasons, or special times during *every* season, when bees will starve unless they are fed. If I am not right in regard to the above I wish the veterans in the bee business would correct me. I do not believe it is true that I "take *pleasure* in saying ill-natured things" about St. Cloud or any other place.

EXAGGERATED STATEMENTS IN REGARD TO FLORIDA, ETC.

On page 356, June 1, I gave a letter protesting against our accepting certain advertising from the Seaboard Airline Railway. I made a clipping of this and forwarded it to headquarters of the S. A. L., Norfolk, Va. Below is their reply; and as it gives some valuable facts I publish it entire:

Mr. A. I. Root:—This will acknowledge receipt of your kind letter of June 10, accompanied by some criticisms on the part of Mr. A. W. Foreman, Whitehall, Ill.

The land area of Florida is 54,861 square miles; and while the correspondent has doubtless been in Florida, his article would indicate that he did not spend sufficient time to investigate conditions in so large an area. The result of the efforts of Mr. Root is a complete answer, and can be multiplied many times by individual instances in the Manatee section. We do carry an advertisement in the *Rural New-Yorker*, and read that valuable journal regularly. Mr. Foreman refers to the entire area as being sand. The 54,861 square miles in Florida

exceeds the area of Pennsylvania. It would probably be just as correct to say that all of Pennsylvania was coal land. The Manatee book and the developments of the Manatee district have been most carefully selected, and they do not tell of the maximum possibilities of intelligent and careful agricultural methods under the best conditions in that section, as we used the most conservative method. Mr. Foreman would doubtless be surprised to know that the Palmer interest, who already have a very large interest in Manatee County, have recently purchased 680 acres of land just south of Bradentown, the consideration said to be $23,000, or nearly $40.00 per acre. Land to bring this sum must have value, and it was sold to people who already have an interest in the landed area of that section. Another Illinois citizen is reported to have purchased 250 acres in the Manatee district for the purpose of developing citrus groves. Price is not reported; but the location of the property leads us to believe that it was no small sum per acre. If Mr. Foreman will take the United States census records, showing the almost marvelous increases in the population of southern Florida, Manatee County especially, for the past ten years, I am satisfied he would have a better line of information on the State than now appears to have reached him.

Norfolk, Va. J. A. PRIDE.

It is quite a joke on our good friend Foreman that the *Rural New-Yorker* does carry the advertisement of the S. A. L., although it may not be exactly the advertisement that friend Foreman refers to. I happen to know quite a little about Mrs. Potter Palmer's purchase, for it is right close by the "Robinson Crusoe" island where I spent two winters.

Poultry Department

STODDARD'S CONVERGENT POULTRY-YARDS

How Many Miles can a Hen Travel in a Day? or, if you Choose, How Many Miles does a Hen Travel in a Day? and, Finally, How Many Miles can a Hen Travel in a Day Without Impairing her Egg Record?

Some of you who have not considered the matter may say a hen does not travel even one mile; and may be you will add that, if she is to make a good egg record, she ought *not* to travel half a mile. Philo, you know, has been trying to teach us that a hen will lay more eggs, if she does not travel at all, than if she has the run of the farm. He would, however, dig up the ground in her little pen, and bury in it some grain so as to induce her to do work that would probably be the equivalent of quite a *little* travel.

Some years ago I visited our good friend Hunter, at Seven Mile, Ohio. He is the great seed-corn man, you know. His dwelling is set on a very pretty little hill or mound. The ground slopes away from the house in every direction; and corn-growing has been so much of a hobby all his life that his cornfields come clear up to the house in every direction. As fences would be in the way, so far as I can recall he has none. The men start out from the barn near the house with a team in the morning, and go off cultivating half a mile or more in every direction, doing something useful, "going and coming." Instead of going through a long lane to get to their work, their work *commences* right at the stable and then *ends* at the same spot. Well, friend Hunter has a lot of chickens. They pick up their food while roaming through the cornfields, following the plows, picking up grubs, etc., and earning their living in many ways besides the eggs they lay.

Do you ask how he can have any garden without fences? Well, he endeavors to have his garden so far away that the chickens will not get up to it. When I was there he had a beautiful garden nearly a quarter of a mile from the house; but some of the most enterprising of his poultry had found it and "got there" after all. I think I never saw a handsomer or healthier lot of chickens. They just crowed and cackled and rejoiced from early morn till dewy eve—chickens little and chickens big; and I believe that he or his good wife or the children always have excellent "luck" with chickens, while a neighbor who had all modern appliances, including lamp-heated brooders, had dead chickens by the score. At the same time that friend Hunter's chickens were going everywhere in the field, this neighbor had his chickens shut up, and lamps burning to "keep them warm" so they could not " catch cold." Pardon me if I am telling this story over and over again, for it is one that can not be told too often nor with too much energy and vehemence. Mankind all over the world are spending money in building air-tight houses in order to avoid drafts and catching cold, when plain common sense ought to send them outdoors into the fields, where they can get health and strength by digging and scratching for a living. I am talking about chickens and people both.

Well, perhaps you would like to know what I am driving at. Suppose a laying hen *can* walk a mile or half a mile, and still do a good job at laying eggs. What of it? Well, I am proposing that this same laying hen shall run errands and help earn her own living as well as lay eggs; and I hope she will lay *more* eggs while she is doing errands and saving her owner steps. I have not yet got around to the point where I can send her to the postoffice, grocery, and other

places, but we may accomplish it after all. As I said, I do not exactly expect to have her carry her eggs to the *grocery,* but I do expect to have her bring them up to the grocer's *wagon* instead of having her owner travel around to the nests to pick up the eggs in a basket. Let us now go back a little.*

As I told you on page 578, Sept. 15, 1911, between thirty and forty years ago I was greatly excited in consequence of a series of articles in the *American Agriculturist,* entitled "An Egg-farm." The writer was our veteran friend, H. H. Stoddard. He had planned to have poultry-houses located all over the field—I think about ten rods apart. They were arranged like the cells of a honeycomb. A low-down wagon went to each house, carrying water and grain, and to gather the eggs, etc. I started such an egg-farm in our basswood orchard at the time it was planted, in 1872. I soon decided, however, that one objection to Stoddard's egg-farm was the amount of travel incumbent on the owner in order to keep things in running order. Well, this same Stoddard is now down in Texas superintending an up-to-date (or we may say 1912) egg-farm; and in place of going around to the different poultry-houses with a horse and wagon he makes the laying hens do the running. Before I saw that friend Stoddard had got the idea of it, it had been running through my head, off and on, for years.

SOME PLAN OF TAKING ADVANTAGE OF THE DISPOSITION OF MANY OF OUR BEST EGG-LAYING TRIBES OF FOWLS; THE DISPOSITION TO ROAM AND RAMBLE.

I had planned to have four or perhaps eight yards all running down to a common center, where the nests, watering-troughs, the feed-pans, and the roosts were to be located; but friend Stoddard has "outgeneraled" me by having his arranged like the spokes in a wheel—say of a wagon or buggy. The circle in the center, or where the hub of the wheel comes, is to be large enough to include a granary. The spaces between the spokes of the wheel are the separate yards. I think he has sixteen yards, with the granary in the center. This granary had, perhaps, better be a round building, say something like a silo. A lane gives access to this inside circle, 45 feet in diameter, which he describes in the *American Poultry Advocate* for May. A team can come in with a load of grain and go right around the round granary, then go out again. This "inner" circle or fence is 45 feet in diameter, and with sixteen yards each yard would occupy a part of this smaller circle, about ten feet across. The division fences ought to run out far enough to give yard room, say for fifty hens in each yard. If the fowls were not too much disposed to get too far away from where the feed, water, and nests are located, he might leave the outside ends entirely open so a team, a harrow, or any other farm implement could be driven from one yard right to another without opening gates so as to grow corn, for instance, in each yard as Mr.

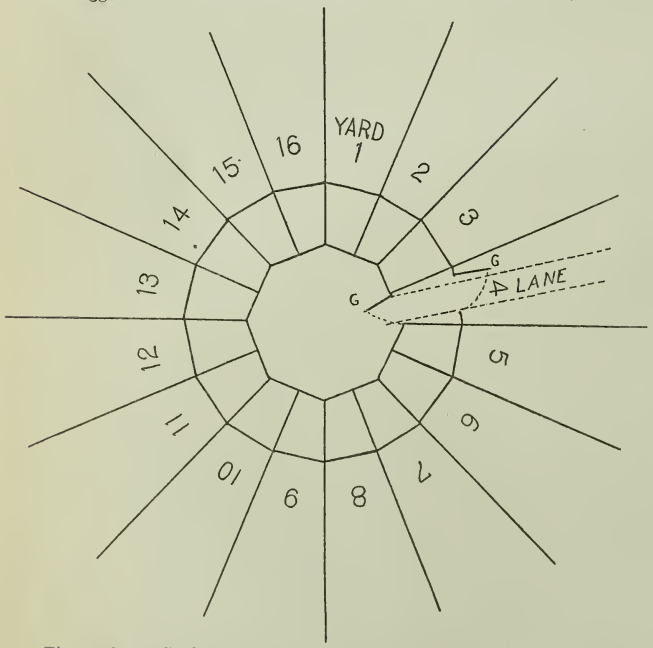


Fig. 1 shows Stoddard's convergent poultry-yards. As will be noticed, it pictures 16 yards converging to the center, where the granary is located. The engraver has outlined 16 poultry-*houses* adjoining; but in Florida and Texas I do not think these houses will be needed. In fact, H. H. Stoddard, the inventor, of Riviera, Texas, has 600 fowls in yards, as above, roosting in the open air, without any roof over their heads at all. I do not know at present how he protects the food-hopper and the nests.

* Our stenographer suggests that I, unlike Mohammed, who, being unable to bring the mountain to him, concluded to go to that, have solved that problem by bringing the chickens to me instead of being compelled to chase after them to feed them and gather their eggs.

Hunter does, or, if you choose, grow potatoes. Down in Florida the chickens would dig up and eat a good lot of the potatoes nearest their house or home; but I do not know but potatoes or something equivalent would be a cheap way of furnishing them with green food. Have a field big enough so as to give them all they want, and *still* have some left. Very likely it would be wisdom to have a fence or some gates so as to keep them off the crops, if need be, until they are well started.

In Texas, where my friend Stoddard has his up-to-date egg-farm, the weather is so warm (as it is in my Florida home) that he declares no roof is needed over the roosting-places; and after having tried this plan for two winters they do seem to do about as well without any shelter. As they, however, seem to *prefer* to run under shelter when we have heavy rains, I think I would have a roof for each pen that would give comfortable shelter to fifty laying hens in each yard. For nests we will have boxes with a sloping roof, or, rather, a hinged cover for a roof—coming inside of the inclosure around the granary. Friend Stoddard has sixteen yards, as I have told you, all running down to one narrow center. With fifty hens in the yard this would make 800 on the egg-farm. But one yard would be occupied by the lane running down to the granary, or at least the lane would take up a considerable part of it, and another yard would probably be saved for sitting hens, and possibly two or more yards for chickens of different ages.* This would leave twelve yards to contain fifty laying hens each, or 600 laying hens in all. Well, friend Stoddard tells us in the *Journal* that one who has had practice with such an arrangement can feed the 600 fowls *in one minute,* and not have them all crowding and getting their muddy feet in the food, etc., either. The watering arrangement is simply a dish into which water is constantly

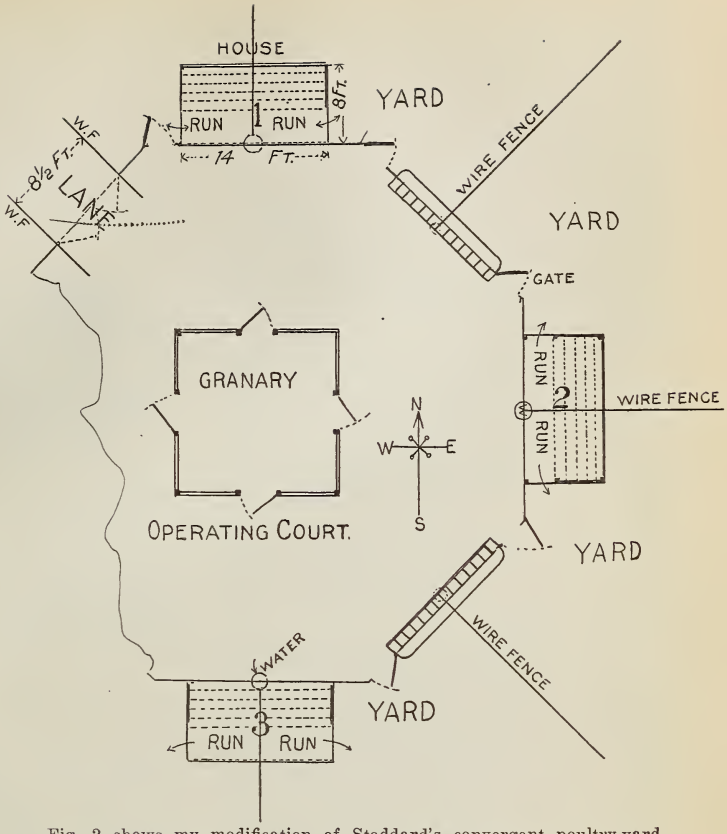


Fig. 2 shows my modification of Stoddard's convergent poultry-yard. You will observe, however, that I have only 8 yards instead of 16, and I have 4 poultry-houses, each 8x16, divided in the center by the wire netting so as to make 8 roosting-places 8 feet square. These roosting-houses have a shingle roof at present, with doors so arranged that all the poultry can be securely locked up nights. The granary is so arranged, as you will notice, that the feed may be carried from the store-bins to the feed-hopper only a few feet away; and that is also arranged so that one roof will answer for the two yards, and the feed-hopper is located right in the division fence so that one hopper feeds two yards; therefore you will observe that 4 hoppers answer for 8 yards. In like manner four series of nests answer for the 8 yards, and also, in like manner, 4 feed-hoppers, and 4 watering-dishes, or troughs. I have not thought it worth while to show the watering-arrangement either in the cuts or diagrams.

* In order to get the proper number of pullets for our "egg-farm," we shall have to raise about an equal number of males; at least there is no way as yet for helping it to any great extent so far as I can learn. Well, we are frequently told that the sexes should be separated about as soon as we can distinguish the cockerels, and we want a separate yard for these. With my arrangement of fences and yards down in Florida my cockerels were so far away that they sometimes got neglected; and if you want to sell them for broilers or "fries," as they call them in the South, they need to be crowded with the best kind of food and care. Well, just think of the saving of time and labor in having these "young roosters" (like all the rest) come right up to the granary for food, water, grit, shells, meat, or whatever else you choose to give them.

dropping, and they are so arranged that each dish will water two yards. For fifty laying hens there ought to be about half a dozen nests. You will probably never get over forty eggs a day, even when they are doing their best, and this would give seven eggs for each nest. Down in my Florida home I frequently have ten or eleven eggs laid in one good-sized nest—sometimes a dozen. These nests can be made in long boxes of a dozen each, set right across where the partition fence comes—six nests on one side of the partition fence and six on the other.

When it is time to take the eggs to market, a light wagon or auto (as you choose or can afford) simply runs around the granary and picks up the eggs and they are loaded for market in five or ten minutes, or may be less. Grit and oyster-shells, as well as water, are furnished in the same way. Green food, grass, and insects, the fowls get by going out on their free range, giving them a narrow yard, or perhaps a three-cornered yard, an eighth of a mile long if you can afford it.

You may suggest that they will lay in the bushes rather than in the yard. After testing the matter for half a dozen years I find that my strain of Leghorns and Buttercups as a rule *prefer* to lay in a pleasant and convenient nest under shelter rather than to go out into the bushes. The pullets, when they begin to lay, sometimes will steal a nest or drop their eggs on the ground; but they soon get over it, and get over to where the other hens lay. If you decide that you want their roost placed under shelter, a shelter or double roof can be easily fixed across one of the division fences, so as to make your open-front house cover two yards. In this case, if you sweep up the droppings under the roost every morning, as we have been doing every morning for two or three years past, very little time is required. If you do this, I do not think that, as a rule, you will be troubled with vermin of any sort. By the way, I would have this "inner court" around the granary *absolutely* secure from rats, mice, skunks, or other prowling nocturnal visitors. Until this last season I supposed that one-inch poultry-netting would keep out rats. We have no mice in Florida. Either they have never got there or they do not like the locality. Well, even if we do *not* have mice I found *young* rats getting through the inch-mesh netting; therefore I would have the first two feet of this inner yard made of ¾-inch netting, or, if necessary, of half-inch-mesh wire cloth, and I would have this go down in the ground far enough so that no animals would dig under it. One of our government bulletins recommends bending the netting and carrying it horizontally six inches. Skunks and other animals that dig under, always dig straight down close to the fence. When they find the wire netting runs out horizontally, say six inches below the surface, they will probably give up the job. Under *no circumstances* must rats and other wild animals be permitted to get into the granary; and in order to have things neat and tidy I would never permit a chicken, little or big, to have access to this inner circle. Be sure that nothing gets in during the night time. You will need to have a gate to shut up the roadway nights, say one running up at least two feet.

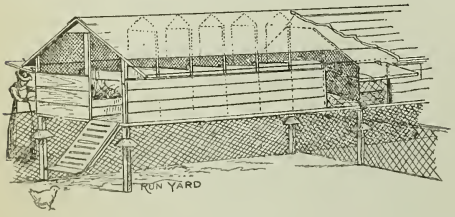


Fig. 3 shows about the plan I have decided on for nesting-places. I am sure it is best to give the fowls a secluded nest, free from interruptions, and where they will not be frightened by visitors who go through the yard; and if egg-eating should get started I would have the nests so that they can be made quite dark. The engraver has made a part of the nest-boxes of wire netting. This will be especially desirable in hot climates like Florida and Texas. I prefer to have the nests up, say, 2 to 2½ feet from the ground so as to avoid the necessity of stooping over.

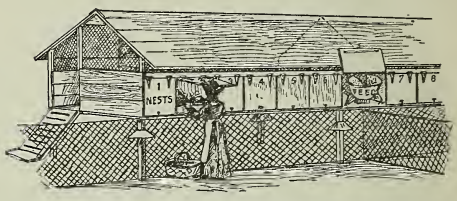


Fig. 4 shows the plan of gathering the eggs. The picture shows a little door for each nest. Now, this on some accounts would be very desirable; but it will be quite a saving in time and labor to have one long door that will cover the whole six nests. When this is raised up the eggs will all be gathered very quickly; and I am not sure but I prefer to have the nests a little lower down so we can raise a part of the roof instead of the doors when gathering the eggs. The picture shows the egg-basket standing on the ground. People of my age, I am sure, will object to this, because it necessitates stooping over.

NOW A WORD ABOUT SITTING HENS.

I have already mentioned one of Stoddard's articles that I said was worth ten dollars to me. It was because of the idea it contained as follows:

I mentioned having four yards out of the sixteen unoccupied the greater part of the year. Suppose in going around you find a sitting hen. Just pick her up and put her

in one of the unoccupied yards. These yards are furnished with food, drink, grit, shells, etc., like all the others. Each yard is exactly like every other yard. If this hen wants to sit on a particular nest in one yard, just give her a setting of eggs in the same nest in a vacant yard. If she does not stay on the nest when you put her there, never mind. She will soon go right back to it, because it is exactly like the nest which she wanted to sit on in the other yard. In this way you can put any number of sitting hens in one vacant yard. Or if there are half a dozen of them, have a second yard for sitting hens. You will notice that the sitting hens with this equipment would have all the liberty of a stolen nest on the average farm. They are outdoors, under natural conditions; and yet they will get back to their nest every time, because it will be to them practically the very nest where they *started* to sit.

Now, you need not say this arrangement is only a beautiful theory. Friend Stoddard has got it running, and says it works all right. I hardly need remind you that

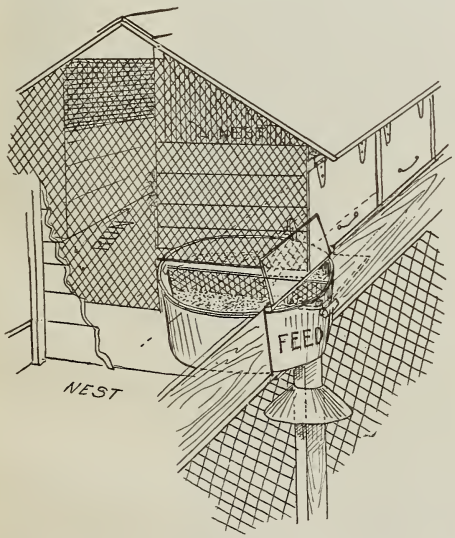


Fig. 5 shows the feed-hopper that I prefer. It is a large-sized galvanized tub. The wire cloth that separates the yards goes clear down to the bottom of the tub. This tub is placed just midway in the nest-boxes—half of the nests on one yard, and half in the other. The tub should be large enough so the hens can get in and get the feed. No fowls are to be permitted under any circumstances to roost in or about the nest-boxes. You will notice by Fig. 2 that their roosting-houses are a separate affair from the nest-boxes. We want to take every possible pains to have our eggs fresh and clean, without the necessity of washing them; and I think I can manage with the above arrangement so no droppings will be found in or about the nest. After several winters' experience, I notice that my hens seldom or never void their droppings while they are in the tub of feed. They seem to have at least a little sense of the "fitness" of things when they have a fair chance.

the greatest obstacle in the way of conducting a successful poultry-farm, or any other kind of farm for that matter, is the expense of competent help. This up-to-date egg-farm I have been describing, when every thing else is fixed just right, should all be easily managed by one person, or, I think, by any average boy or girl who loves chickens. If the wagon draws in the grain and draws away the eggs, and you have a windmill or a spring to furnish the running water, there is very little fatiguing work to be done. Of course, the same arrangement will work all right with ducks; and, better still, because the fences to restrain the ducks need be only two feet high; and the Indian Runners would travel half a mile, or more, if need be, to get to running water, and they will come back every night where they are fed to be shut up until they have laid their eggs.

If chickens are wanted after dark, for the market, or for any purpose, their roosting-places are all together. In fact, your 600 hens can all be under *one* roof, if need be. Do you suggest that this would be a bad arrangement if contagious diseases get among the flock? Yes, it might be a little bad; but with very little effort you can arrange to have them roost, and perhaps lay their eggs also, at a little distance from any other flock; but with proper precaution, such as I have outlined, I believe there is little or no need of having either vermin or contagious diseases. A successful egg-farm, if I am correct, does *not* have any thing of the sort.

One more thing. Every little while we hear of a poultry establishment getting afire and burning up a lot of chickens. I visited a place ten days ago where a brooder-house caught fire, resulting in the loss of something like a thousand chickens. Now, if you are either in Texas or Florida, you can have your shelter and every thing else made of galvanized iron so there will be *nothing* to burn, and no harbor for insects. If you are going to use incubators I would have them in a cement cellar under the granary; and I think I would have this granary also made of galvanized iron so there will be nothing to catch afire and burn up. We have corncribs here in the North—in fact, we have one on our place here in Medina—made entirely of galvanized iron that keeps both seed corn and buckwheat beautifully. It is all made of cement and perforated iron. There is not a thing about it of wood. If you have electric lights in your vicinity I would have the whole establishment lighted by electricity.

Finally, dear friends, I am just now anx-

ious to get back to my Bradentown home in the fall so that I can remodel my five acres down there, in the way I have outlined above, for my Runner ducks and Leghorn-Buttercup laying hens. I have submitted the whole plan to you thus early in the season so that you may be thinking it over. What is the use of wearing out your *shoes* and yourself likewise, in traveling miles in caring for your chickens, when the laying hens will gladly do the traveling for you? The hens are "young and spry"—especially the ones that lay the eggs. If they are *not* young and spry it is because *you* are at fault. Shall we not let them do the laborious running?

HIGH-PRESSURE GARDENING

ANOTHER GREAT BIG "DISCOVERY;" THE USE OF LIME FOR GETTING A STAND OF SWEET CLOVER.

The convergent poultry-yard, described elsewhere in this issue, I hope is destined to produce a "revolution" in egg-farms—at least friend Stoddard and I think it may. But we are old men, and both of us somewhat given to riding hobbies. But you just wait and see. Well, now, here is another thing that seems likely to *"revolutionize"* the great science of agriculture. It is not my invention, however, for it comes from our Ohio Experiment Station. Some years ago Dr. C. C. Miller said if anybody could tell him how to get a solid growth of sweet clover in the fields, like that growing by the roadside, he would be glad to know it. That might have been twenty years ago. Well, our Ohio Experiment Station has been working for about twenty years, and has only in this present year of 1912 gotten at the truth. For their experiments, something like twenty years ago they purchased a farm in Northern Ohio—the poorest worn-out farm to be found, perhaps, in all of Ohio. Last Saturday, June 15, they had a field meeting in order to demonstrate what *lime* will do on poor clay soil, and later I paid a visit to the Station ground at Wooster. Not only sweet clover but alsike, alfalfa, timothy, and red clovers were tested in strips, and all these strips ran across a field where one half was heavily limed, and the other half had no lime. A great variety of commercial fertilizers were also tested across the limed and unlimed land. The result was not only wonderful, but really *astounding*. We saw beds of sweet clover, both white and yellow, as high as one's head, the latter in full bloom; but when this strip ran on to the unlimed portion of the field the result was almost nothing but plantains, wild grasses, and weeds. The results were practically the same at the sub-station mentioned, as in Wooster. The heavy applications of fertilizer amounted to little or nothing without the lime. When we came to a strip, however, where 15 loads of barn manure to the acre were applied, there was a partial stand of the clovers and timothy. The barnyard manure was almost the only thing that compensated for the lack of lime. Some of you know the A. I. Root Co. have been selling sweet-clover seed for twenty years or more; and when the seed that grew nicely here around my Medina home did not do any thing to amount to much elsewhere we have a good many times paid the money back or furnished more seed at a reduced price. Now the truth has just come up. Where the seed was sown on limestone soil it produced a crop. Where fields have been farmed until the lime was used up, sweet clover balked. Once more, wherever stone roads have been constructed through Ohio, and almost everywhere else, especially if said roads were made of *crushed limestone*, sweet clover came up rank, thrifty, and luxuriant along both sides of the road. I think you will find it everywhere if you have your eyes open. Well, this crushed limestone mixed with soil by the agency of the iron wagon-tires, produces just the combination that the clover wans. And these same wagon-wheels distribute the seed for miles along the edges of the road. Another thing, soil thrown up by ditches along the railway, or thrown out by the railway companies, contains more or less lime that has not been used up by exhaustive farming, and therefore the sweet clover grows.

A am sorry to note that the sweet-clover bulletin from the Department of Agriculture, that I have recently quoted from at considerable length, contains scarcely any mention of the fact that sweet clover must have lime. It can not endure acid or sour soils. Within 24 hours after I witnessed these wonderful results I had five kinds of sweet clover planted, each kind running across a bed in the greenhouse, half limed and half unlimed.

In regard to the quantity of lime needed, one of the tests at the Wooster station contained six tons of ground limestone to the acre. Another had 15 tons. There was not very much difference in the results. My impression is that a single ton will furnish all that is needed. See Special Notices.